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Wilde R. W., J. H. Westcott, "The characteristics of the human operator engaged in a tracking task" (Regular paper), Automatica **1**, 1, pp. 5–19, January, 1963.

Starkermann R., "Das Kriterium der Symmetrie-Minimalstabilität mehrfachgeregelter Systeme" (Regular paper), Automatica **1**, 1, pp. 21–29, January, 1963.

Rosenbrock H. H., "A Lyapunov function with applications to some nonlinear physical systems" (Regular paper), Automatica **1**, 1, pp. 31–53, January, 1963.

Chang S. S. L., "Optimal control in bounded phase space" (Regular paper), Automatica **1**, 1, pp. 55–67, January, 1963.

Aoki M., "Synthesis of optimal controllers for a class of maximization problems" (Regular paper), Automatica **1**, 1, pp. 69–80, January, 1963.

"Report of meeting: IFAC symposium on optimizing and self adapting theory. Rome, Italy — 26–28 April 1962" (IFAC report), Automatica **1**, 1, pp. 81–91, January, 1963.

**Volume 1, Issue 2/3 — August, 1963**

"Foreword to the second issue" (Editorial), Automatica **1**, 2/3, pp. 93–95, August, 1963.

Rosenbrock H. H., "A Lyapunov function for some naturally-occurring linear homogeneous time-dependent equations" (Regular paper), Automatica **1**, 2/3, pp. 97–109, August, 1963.

Karnopp D. C., "Random search techniques for optimization problems" (Regular paper), Automatica **1**, 2/3, pp. 111–121, August, 1963.

Cuénod M., A. Kazimirowski, D. Greindl, "Les automatismes de changement d'état de marche des groupes de la centrale de Vianden" (Regular paper), Automatica **1**, 2/3, pp. 123–146, August, 1963.

Hammond P. H., M. J. Duckenfield, "Automatic optimization by continuous perturbation of parameters" (Regular paper), Automatica **1**, 2/3, pp. 147–175, August, 1963.

Oldenburger R., G. Thompson, "Introduction to time optimal control of stationary linear systems" (Regular paper), Automatica **1**, 2/3, pp. 177–205, August, 1963.

Fowler M. E., "Numerical methods for the synthesis of linear control systems" (Regular paper), Automatica **1**, 2/3, pp. 207–225, August, 1963.

**Volume 1, Issue 4 — December, 1963**

Chestnut H., "Automation — what it is and what are the problems it poses" (Editorial), Automatica **1**, 4, pp. 241–252, December, 1963.

Auricoste J., P. Moinereau, "Application des calculateurs numériques a la conduite automatisée des centrales nucleaires" (Regular paper), Automatica **1**, 4, pp. 253–262, December, 1963.

Rosenbrock H. H., "The formulation of optimal control, with an application to large systems" (Regular paper), Automatica **1**, 4, pp. 263–288, December, 1963.

Fuller A. T., "Directions of research in control" (Regular paper), Automatica **1**, 4, pp. 289–296, December, 1963.

Rissanen J., "On the theory of self-adjusting models" (Regular paper), Automatica **1**, 4, pp. 297–310, December, 1963.

"Report of meeting: IFAC 1963 congress at Basel, Switzerland" (IFAC report), Automatica **1**, 4, pp. 311–314, December, 1963.

**Volume 2, Issue 1 — June, 1964**

Barabaschi S., M. Conti, L. Gentilini, A. Mathis, "Heat exchange simulator" (Regular paper), Automatica **2**, 1, pp. 1–13, June, 1964.

Mesarović M. D., L. Birta, "Synthesis of interaction in multivariable control systems" (Regular paper), Automatica **2**, 1, pp. 15–39, June, 1964.

Chien H. H.-Y., R. Aris, "An adaptive control of the batch reactor — I Identification of kinetics" (Regular paper), Automatica **2**, 1, pp. 41–58, June, 1964.

Chien H. H.-Y., R. Aris, "An adaptive control of the batch reactor — II Optimal path control" (Regular paper), Automatica **2**, 1, pp. 59–71, June, 1964.

**Volume 2, Issue 2 — September, 1964**

King R. E., "The frequency response and stability of a class of amplitude dependent, sampled-data control systems" (Regular paper), Automatica **2**, 2, pp. 73–87, September, 1964.

Bilal A. Y., L. F. Kazda, "Stability and performance analysis of a certain class of nonlinear time varying feedback control systems" (Regular paper), Automatica **2**, 2, pp. 89–106, September, 1964.

Gille J. C., J. G. Paquet, R. Pouliquen, "Sur l'existence des oscillations forcées dans les systèmes asservis a relais" (Regular paper), Automatica **2**, 2, pp. 107–116, September, 1964.

Githens J. A., H. P. Kelly, J. C. Lozier, A. A. Lundstrom, "Telstar antenna pointing system, organization and performance" (Regular paper), Automatica **2**, 2, pp. 117–124, September, 1964.

"Report of meeting: Stability of systems" (Other), Automatica **2**, 2, pp. 125–127, September, 1964.

**Volume 2, Issue 3 — January, 1965**

Lozier J. C., J. A. Norton, M. Iwama, "The servo system for Telstar antenna positioning" (Regular paper), Automatica **2**, 3, pp. 129–149, January, 1965.

Horowitz I. M., "Passive-adaptive flight control design for re-entry vehicles" (Regular paper), Automatica **2**, 3, pp. 151–165, January, 1965.

Mansour M., "Instability criteria of linear discrete systems" (Regular paper), Automatica **2**, 3, pp. 167–178, January, 1965.

Gaines W. M., L. A. Goshorn, R. G. Livingston, "Analog computers for the dynamic evaluation of on-line digital control computer programs" (Regular paper), Automatica **2**, 3, pp. 179–193, January, 1965.

Kwakernaak H., "On-line iterative optimization of stochastic control systems" (Regular paper), Automatica **2**, 3, pp. 195–208, January, 1965.

"Report of meeting: 1964 Joint Automatic Control Conference" (Other), Automatica **2**, 3, pp. 209–210, January, 1965.

**Volume 2, Issue 4 — July, 1965**

Naylor A. W., "A transform technique for multivariable, time-varying, discrete-time, linear systems" (Regular paper), Automatica **2**, 4, pp. 211–234, July, 1965.

Soliman J. I., A. Al-Shaikh, "Sampled-data controls and the bilinear transformation" (Regular paper), Automatica **2**, 4, pp. 235–242, July, 1965.

Vande Vegte J., "Analysis and synthesis of feedback control systems for the automatic balancing of rotating shaft systems" (Regular paper), Automatica **2**, 4, pp. 243–253, July, 1965.

Flügge-Lotz I., M. D. Maltz, "Attitude stabilization using a contactor control system with a linear switching criterion"

(Regular paper), Automatica 2, 4, pp. 255–274, July, 1965.

**Volume 3, Issue 1 — October, 1965**

Williams T. J., "Economics and the future of process control" (Regular paper), Automatica 3, 1, pp. 1–13, October, 1965.

Rijnsdorp J. E., "Interaction in two-variable control systems for distillation columns - I Theory" (Regular paper), Automatica 3, 1, pp. 15–28, October, 1965.

Rijnsdorp J. E., "Interaction in two-variable control systems for distillation columns - II Application of theory" (Regular paper), Automatica 3, 1, pp. 29–52, October, 1965.

**Volume 3, Issue 2 — December, 1965**

Ray W. H., R. Aris, "An adaptive control of the batch reactor — III Simplified parameter estimation" (Regular paper), Automatica 3, 2, pp. 53–71, December, 1965.

Giordano P., A. Mathis, G. Scandellari, "The design of a non-linear reactor control system" (Regular paper), Automatica 3, 2, pp. 73–89, December, 1965.

Grayson L. P., "The status of synthesis using Lyapunov's method" (Regular paper), Automatica 3, 2, pp. 91–121, December, 1965.

Chestnut H., "The age of automation, by L. Bagrit" (Book review), Automatica 3, 2, p. 123, December, 1965.

**Volume 3, Issue 3/4 — January, 1966**

Westcott J. H., "Optimal control studies" (Regular paper), Automatica 3, 3/4, pp. 125–133, January, 1966.

Mitter S. K., "Successive approximation methods for the solution of optimal control problems" (Regular paper), Automatica 3, 3/4, pp. 135–149, January, 1966.

Clark J. M. C., "Sensitivity of an optimal system to specified errors of measurement" (Regular paper), Automatica 3, 3/4, pp. 151–159, January, 1966.

Arbib M. A., "Automata theory and control theory — a rapprochement" (Regular paper), Automatica 3, 3/4, pp. 161–189, January, 1966.

Stafford T. J. F., "A variational approach to a problem in boiler control" (Regular paper), Automatica 3, 3/4, pp. 191–202, January, 1966.

Levine M. D., "Trajectory optimization using the Newton-Raphson method" (Regular paper), Automatica 3, 3/4, pp. 203–217, January, 1966.

Shapiro S., "Lagrange and Mayer problems in optimal control" (Regular paper), Automatica 3, 3/4, pp. 219–230, January, 1966.

Howl J. M., "Queuing systems" (Regular paper), Automatica 3, 3/4, pp. 231–244, January, 1966.

Mayne D. Q., "Parameter estimation" (Regular paper), Automatica 3, 3/4, pp. 245–255, January, 1966.

Cumming I. G., "Numerical techniques for the non-linear prediction problem" (Regular paper), Automatica 3, 3/4, pp. 257–273, January, 1966.

**Volume 4, Issue 1 — May, 1966**

Truxal J. G., "The emerging responsibilities of control technology" (Regular paper), Automatica 4, 1, pp. 1–5, May, 1966.

Knowles J. B., R. Edwards, "Computational error effects in a direct digital control system" (Regular paper), Automatica 4, 1, pp. 7–29, May, 1966.

Chan S. Y., K. Chuang, "A study of linear time-varying systems subject to stochastic disturbances" (Regular paper), Automatica 4, 1, pp. 31–48, May, 1966.

"Report of meeting: Tokyo IFAC Symposium on Systems Engineering" (IFAC report), Automatica 4, 1, pp. 49–52, May, 1966.

Nightingale J. M., "Automatic and remote control. Vol. 1, Theory, Vol. 2, Applications and components, by V. Broïda" (Book review), Automatica 4, 1, p. 53, May, 1966.

**Volume 4, Issue 2 — November, 1966**

Stone R., "The model in its environment" (Regular paper), Automatica 4, 2, pp. 55–71, November, 1966.

Mayne D. Q., "A solution of the smoothing problem for linear dynamic systems" (Regular paper), Automatica 4, 2, pp. 73–92, November, 1966.

Asbury H. O., "Computer typesetting, by M. P. Barnett" (Book review), Automatica 4, 2, p. 93, November, 1966.

Gibson J. E., "Optimal and self-optimizing control, R. Oldenburger (editor)" (Book review), Automatica 4, 2, pp. 93–94, November, 1966.

**Volume 4, Issue 3 — August, 1967**

Pearson J. B., "On nonlinear least-squares filtering" (Regular paper), Automatica 4, 3, pp. 97–105, August, 1967.

Brogan W. L., "Theory and application of optimal control for distributed parameter systems — I Theory" (Regular paper), Automatica 4, 3, pp. 107–120, August, 1967.

Brogan W. L., "Theory and application of optimal control for distributed parameter systems — II Computational results" (Regular paper), Automatica 4, 3, pp. 121–137, August, 1967.

Ray W. H., R. Aris, "An adaptive control of the batch reactor — IV A more sophisticated controller" (Regular paper), Automatica 4, 3, pp. 139–161, August, 1967.

Asbury H. O., "On-line computation and simulation: the OPS-3 system, by Greenberger, Jones, Morris and Ness" (Book review), Automatica 4, 3, pp. 163–164, August, 1967.

Monrad-Krohn L., "The programming language LISP: its operation and applications, E. C. Berkeley and D. G. Bobrow (editors)" (Book review), Automatica 4, 3, p. 163, August, 1967.

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Barnes J. L., "Information theoretic aspects of feedback control systems" (Regular paper), Automatica 4, 4, pp. 165–185, May, 1968.

Barnett S., C. Storey, "Some results on the sensitivity and synthesis of asymptotically stable linear and non-linear systems" (Regular paper), Automatica 4, 4, pp. 187–194, May, 1968.

Kinnen E., Chiou-Shiun Chen, "Liapunov functions derived from auxiliary exact differential equations" (Regular paper), Automatica 4, 4, pp. 195–204, May, 1968.

Eykhoff P., "Process parameter and state estimation" (Regular paper), Automatica 4, 4, pp. 205–233, May, 1968.

Cuénod M., A. P. Sage, "Comparison of some methods used for process identification" (Regular paper), Automatica 4, 4, pp. 235–269, May, 1968.

"Report of meeting: Prague IFAC Symposium 1967 on Identification in Automatic Control Systems" (IFAC report), Automatica 4, 4, pp. 271–279, May, 1968.

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"Announcement" (Editorial), Automatica 4, 5/6, p. 281, November, 1968.

Gillings D. W., "Aspects of economic evaluation of process control systems — I Influence of statistical nature of disturbances on system profitability" (Regular paper), Automatica 4, 5/6, pp. 283–307, November, 1968.

Cho Yo-Sung, K. S. Narendra, "Stability of nonlinear time-varying feedback systems" (Regular paper), Automatica 4, 5/6, pp. 309–322, November, 1968.

Zorn J., "The evaluation of Fourier transforms by the sampling method" (Regular paper), Automatica **4**, 5/6, pp. 323–335, November, 1968.
Pagurek B., C. M. Woodside, "The conjugate gradient method for optimal control problems with bounded control variables" (Regular paper), Automatica **4**, 5/6, pp. 337–349, November, 1968.
Cook G., J. E. Funk, "Quadratic control problem with an energy constraint; approximate solutions" (Regular paper), Automatica **4**, 5/6, pp. 351–363, November, 1968.
Kerr C. N., "The stability of systems with multiplicative feedback" (Regular paper), Automatica **4**, 5/6, pp. 365–391, November, 1968.
Barker H. A., D. Raeside, "Linear modelling of multivariable systems with pseudo-random binary input signals" (Regular paper), Automatica **4**, 5/6, pp. 393–416, November, 1968.
Singer D., "On a new method of investigating large technological systems — I Theory" (Regular paper), Automatica **4**, 5/6, pp. 417–424, November, 1968.
Singer D., T. Koltai, "On a new method of investigating large technological systems - II Program structure of the network procedure" (Regular paper), Automatica **4**, 5/6, pp. 425–434, November, 1968.

## Volume 5, Issue 1 — January, 1969

Axelby G. S., "The IFAC journal — a new Automatica" (Editorial), Automatica **5**, 1, pp. 1–2, January, 1969.
Nowacki P. J., "A message from the president of IFAC" (Editorial), Automatica **5**, 1, pp. 3–4, January, 1969.
Coales J. F., "The birth of an IFAC journal" (Editorial), Automatica **5**, 1, pp. 5–6, January, 1969.
Letov A. M., W. E. Miller, "A message to readers of the journal" (Editorial), Automatica **5**, 1, pp. 7–8, January, 1969.
Chestnut H., "Comments from the Automatica editorial board" (Editorial), Automatica **5**, 1, pp. 9–10, January, 1969.
Niemi A., "IFAC Symposium in Israel" (IFAC report), Automatica **5**, 1, pp. 13–14, January, 1969.
Larson R. E., W. G. Keckler, "Applications of dynamic programming to the control of water resource systems" (Regular paper), Automatica **5**, 1, pp. 15–26, January, 1969.
Levin O., "Optimal control of a storage reservoir during a flood season" (Regular paper), Automatica **5**, 1, pp. 27–34, January, 1969.
Hatvany J., "The April 1968 International Symposium on Pulse-rate and Pulse-number Signals in Automatic Control" (Other), Automatica **5**, 1, pp. 35–36, January, 1969.
Gaines B. R., R. A. Shemer, "Fitting control mathematics to control hardware: an aspect of the 1968 IFAC Pulse-Symposium" (Other), Automatica **5**, 1, pp. 37–40, January, 1969.
Hatvany J., "The DDA integrator as the iterative module of a variable structure process control computer" (Regular paper), Automatica **5**, 1, pp. 41–49, January, 1969.
Elsden C. S., A. J. Ley, "A digital transfer function analyser based on pulse rate techniques" (Regular paper), Automatica **5**, 1, pp. 51–60, January, 1969.
Fredriksen T. R., "The closed-loop step motor — an ideal actuator for process control" (Regular paper), Automatica **5**, 1, pp. 61–65, January, 1969.
Thomas T. H., M. T. G. Hughes, "Performance of a digital two-term controller" (Regular paper), Automatica **5**, 1, pp. 67–75, January, 1969.
Ladányi L., "A complex controller using digital-operational techniques" (Regular paper), Automatica **5**, 1, pp. 77–83, January, 1969.
Singer R. A., "Selecting state variables to minimize eigenvalue sensitivity of multivariable systems" (Regular paper), Automatica **5**, 1, pp. 85–93, January, 1969.
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Buis G. R., "Some iterative solutions in optimal control, by J. B. Plant" (Book review), Automatica **5**, 1, p. 119, January, 1969.
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Axelby G. S., "Improving IFAC symposia" (Editorial), Automatica **5**, 2, pp. 127–128, March, 1969.
Spang, III H. A., "A look at the IFAC/IFIP Toronto Symposium on 'Digital control of large industrial systems'" (IFAC report), Automatica **5**, 2, pp. 131–134, March, 1969.
Schäfer W., "Quality control of large limestone quarries and kilns" (Regular paper), Automatica **5**, 2, pp. 135–144, March, 1969.
Williams T. J., "The IFAC Optimal Systems Planning Symposium" (IFAC report), Automatica **5**, 2, pp. 145–149, March, 1969.
House R. W., J. N. Warfield, "What is system planning?" (Regular paper), Automatica **5**, 2, pp. 151–157, March, 1969.
Aven O. I., A. J. Lerner, I. M. Makarov, "Principles of optimum planning and regulating the metal supply system in the Soviet Union" (Regular paper), Automatica **5**, 2, pp. 159–165, March, 1969.
Yaged, Jr. B., "Traffic flow information for minimum cost routing procedures" (Regular paper), Automatica **5**, 2, pp. 167–173, March, 1969.
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Konar A. F., S. J. Kahne, L. A. Christie, "Sensitivity aspects of linear digital control systems" (Regular paper), Automatica **5**, 2, pp. 199–208, March, 1969.
Roots W. K., I. Wilenitz, "A survey of temperature control in electrically-heated homes" (Survey paper), Automatica **5**, 2, pp. 209–230, March, 1969.
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## Volume 5, Issue 3 — May, 1969

Dorato P., P. V. Kokotović, H. Kwakernaak, "Report on the second IFAC Symposium on System Sensitivity and Adaptivity" (IFAC report), Automatica **5**, 3, pp. 251–256, May, 1969.
McClamroch N. H., L. G. Clark, J. K. Aggarwal, "Sensitivity of linear control systems to large parameter variations"

(Regular paper), Automatica **5**, 3, pp. 257–263, May, 1969.
Shaw L., P. Chalon, "An expansion for evaluating sensitivity to a random parameter" (Regular paper), Automatica **5**, 3, pp. 265–273, May, 1969.
Maslov E. P., A. M. Petrovsky, "Sensitivity of linear systems with respect to random disturbances" (Regular paper), Automatica **5**, 3, pp. 275–278, May, 1969.
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Guardabassi G., A. Locatelli, S. Rinaldi, "Structural uncontrollability of sensitivity systems" (Regular paper), Automatica **5**, 3, pp. 297–301, May, 1969.
Gumowski I., C. Mira, "Sensitivity problems related to certain bifurcations in non-linear recurrence relations" (Regular paper), Automatica **5**, 3, pp. 303–317, May, 1969.
Shah M. J., A. J. Weisenfelder, "Control and optimization of a large ammonia plant with a digital computer" (Regular paper), Automatica **5**, 3, pp. 319–333, May, 1969.
Davison E. J., R. W. Goldberg, "A design technique for the incomplete state feedback problem in multivariable control systems" (Regular paper), Automatica **5**, 3, pp. 335–346, May, 1969.
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Šiljak D. D., "Parameter analysis of absolute stability" (Brief paper), Automatica **5**, 3, pp. 385–387, May, 1969.
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Tomović R., "On man-machine control" (Editorial), Automatica **5**, 4, pp. 401–404, July, 1969.
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Parks P. C., "Watch on Rhine. The IFAC symposium on multivariable control systems, Düsseldorf, Germany, 7–8 October 1968" (IFAC report), Automatica **5**, 4, pp. 417–419, July, 1969.
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Jazwinski A. H., "Adaptive filtering" (Regular paper), Automatica **5**, 4, pp. 475–485, July, 1969.
Wishner R. P., J. A. Tabaczynski, M. Athans, "A comparison of three non-linear filters" (Regular paper), Automatica **5**, 4, pp. 487–496, July, 1969.
Fjeld M., "Optimal control of multivariable periodic processes" (Regular paper), Automatica **5**, 4, pp. 497–506, July, 1969.
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"Associate editors" (Other), Automatica **5**, 4, pp. 533–538, July, 1969.

## Volume 5, Issue 5 — September, 1969

Nowacki P. J., "The importance of automatic control" (Other), Automatica **5**, 5, pp. 541–547, September, 1969.
Anderson B. D. O., "IFAC Symposium on System Dynamics and Automatic Control in Basic Industries" (IFAC report), Automatica **5**, 5, pp. 549–550, September, 1969.
Niemi A., U. Paakkinen, "Simulation and control of flotation circuits" (Regular paper), Automatica **5**, 5, pp. 551–561, September, 1969.
Dodgson L. K., "Application of automatic control to a large coal dredger" (Regular paper), Automatica **5**, 5, pp. 563–575, September, 1969.
Medding R., "Simulation and design of the control system for a 1200 ton coal dredger" (Regular paper), Automatica **5**, 5, pp. 577–587, September, 1969.
Arbib M. A., H. P. Zeiger, "On the relevance of abstract algebra to control theory" (Regular paper), Automatica **5**, 5, pp. 589–606, September, 1969.
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O'Neill W. D., "An interacting control systems analysis of the human lens accommodative controller" (Regular paper), Automatica **5**, 5, pp. 645–654, September, 1969.
Stark L., "The pupillary control system: its non-linear adaptive and stochastic engineering design characteristics" (Regular paper), Automatica **5**, 5, pp. 655–676, September, 1969.
Broida V., "The determination of large time-constants by step-response extrapolation" (Brief paper), Automatica **5**, 5, pp. 677–683, September, 1969.
"Reports from IFAC technical committee chairmen to 1969 general assembly in Warsaw" (IFAC report), Automatica **5**, 5, pp. 685–687, September, 1969.

## Volume 5, Issue 6 — November, 1969

Oldenburger R., "IFAC, from idea to birth" (Editorial), Automatica **5**, 6, pp. 697–703, November, 1969.
Jones, III L. E., K. S. Fu, "On the selection of a subgoal and the use of a priori information in learning control systems" (Regular paper), Automatica **5**, 6, pp. 705–720, November, 1969.
Riordon J. S., "An adaptive automaton controller for discrete-time Markov processes" (Regular paper), Automatica **5**, 6, pp. 721–730, November, 1969.

Stein G., G. N. Saridis, "A parameter-adaptive control technique" (Regular paper), Automatica **5**, 6, pp. 731–739, November, 1969.
Eltimsahy A. H., L. F. Kazda, "An optimal gas-fired heating system" (Regular paper), Automatica **5**, 6, pp. 741–754, November, 1969.
Lindorff D. P., "Relay control of systems with parameter uncertainties and disturbances" (Regular paper), Automatica **5**, 6, pp. 755–762, November, 1969.
Sea R. G., A. G. Vacroux, "Steady state analysis of non-linear systems and multiple input describing functions (M.I.D.F.)" (Regular paper), Automatica **5**, 6, pp. 763–772, November, 1969.
Sannuti P., P. V. Kokotović, "Singular perturbation method for near optimum design of high-order non-linear systems" (Regular paper), Automatica **5**, 6, pp. 773–779, November, 1969.
Garrard W. L., L. G. Clark, "On the synthesis of suboptimal, inertia-wheel attitude control systems" (Regular paper), Automatica **5**, 6, pp. 781–789, November, 1969.
Davison E. J., "A nonminimum phase index and its application to interacting multivariable control systems" (Regular paper), Automatica **5**, 6, pp. 791–799, November, 1969.
Nenonen L. K., B. Pagurek, "Conjugate gradient optimization applied to a copper converter model" (Regular paper), Automatica **5**, 6, pp. 801–810, November, 1969.
Elliott D. F., D. D. Sworder, "A variable metric technique for parameter optimization" (Brief paper), Automatica **5**, 6, pp. 811–816, November, 1969.
Balakrishnan A. V., V. Peterka, "Identification in automatic control systems" (Survey paper), Automatica **5**, 6, pp. 817–829, November, 1969.
Westcott J. H., "Numerical computational methods of optimisation in control" (Survey paper), Automatica **5**, 6, pp. 831–843, November, 1969.
Williams T. J., "Interface requirements, transducers and computers for on-line systems" (Survey paper), Automatica **5**, 6, pp. 845–854, November, 1969.
Man F. T., "On the optimal linear regulator problem with control energy constraint" (Correspondence item), Automatica **5**, 6, pp. 855–857, November, 1969.
Moore J. B., "A note on a singular optimal control problem" (Correspondence item), Automatica **5**, 6, pp. 857–858, November, 1969.

## Volume 6, Issue 1 — January, 1970

Axelby G. S., "The first year" (Editorial), Automatica **6**, 1, p. 1, January, 1970.
Chao H., W. Wickstrom, "The development of dynamic color control on a paper machine" (Regular paper), Automatica **6**, 1, pp. 5–18, January, 1970.
Moran F., J. N. Prewett, "An experiment in the automatic control of power generation" (Regular paper), Automatica **6**, 1, pp. 19–32, January, 1970.
Kwakernaak H., P. Tijssen, R. C. W. Strijbos, "Optimal operation of blast furnace stoves" (Regular paper), Automatica **6**, 1, pp. 33–40, January, 1970.
Pike, Jr. H. E., S. J. Citron, "Optimization studies of a slab reheating furnace" (Regular paper), Automatica **6**, 1, pp. 41–50, January, 1970.
Maarleveld A., J. E. Rijnsdorp, "Constraint control on distillation columns" (Regular paper), Automatica **6**, 1, pp. 51–58, January, 1970.
Pollard G. P., R. W. H. Sargent, "Off line computation of optimum controls for a plate distillation column" (Regular paper), Automatica **6**, 1, pp. 59–76, January, 1970.
Wismer D. A., R. L. Perrine, Y. Y. Haimes, "Modeling and identification of aquifer systems of high dimension" (Regular paper), Automatica **6**, 1, pp. 77–86, January, 1970.
Weir D. H., D. T. McRuer, "Dynamics of driver vehicle steering control" (Regular paper), Automatica **6**, 1, pp. 87–98, January, 1970.
Murtagh T. B., "Optimum interplanetary midcourse velocity-correction schedules" (Regular paper), Automatica **6**, 1, pp. 99–109, January, 1970.
Isobe T., "Automatic control in the iron and steel industry" (Survey paper), Automatica **6**, 1, pp. 111–121, January, 1970.
Quazza G., "Automatic control in electric power systems" (Survey paper), Automatica **6**, 1, pp. 123–150, January, 1970.
"Brief reports on the IFAC congress" (IFAC report), Automatica **6**, 1, pp. 151–159, January, 1970.

## Volume 6, Issue 2 — March, 1970

Tsypkin Y., "Obituary Aleksandr Aronovich Fel'dbaum (August 16, 1913 — January 15, 1969)" (Editorial), Automatica **6**, 2, pp. 169–170, March, 1970.
Andrew A. M., "Whither cybernetics — Yerevan in retrospect" (IFAC report), Automatica **6**, 2, pp. 171–174, March, 1970.
Martin P. J., "Analysis of myocardial performance in the blood pressure control system" (Regular paper), Automatica **6**, 2, pp. 175–191, March, 1970.
Urquhart J., R. L. Krall, C. C. Li, "Adrenocortical secretory function — communications and control aspects" (Regular paper), Automatica **6**, 2, pp. 193–205, March, 1970.
Ivakhnenko A. G., "Heuristic self-organization in problems of engineering cybernetics" (Regular paper), Automatica **6**, 2, pp. 207–219, March, 1970.
Wittler M., C. N. Shen, "Time-optimal nuclear rocket propellant start-up with thermal stress constraints based on distributed parameter model" (Regular paper), Automatica **6**, 2, pp. 221–229, March, 1970.
Rademaker O., L. H. Goessens, J. H. Voskamp, A. C. P. Debie, "Dynamics and control of a clinker cooler" (Regular paper), Automatica **6**, 2, pp. 231–244, March, 1970.
Larson R. E., A. J. Korsak, "A dynamic programming successive approximations technique with convergence proofs. Part I: Description of the method and application" (Regular paper), Automatica **6**, 2, pp. 245–252, March, 1970.
Korsak A. J., R. E. Larson, "A dynamic programming successive approximations technique with convergence proofs. Part II: Convergence proofs" (Regular paper), Automatica **6**, 2, pp. 253–260, March, 1970.
Mesarovic M. D., D. Macko, Y. Takahara, "Two coordination principles and their application in large scale systems control" (Regular paper), Automatica **6**, 2, pp. 261–270, March, 1970.
Young P. C., "An instrumental variable method for real-time identification of a noisy process" (Regular paper), Automatica **6**, 2, pp. 271–287, March, 1970.
Korsak A. J., "On continuous dependence of controls upon parameters in fixed-time free-terminal-state optimal control" (Regular paper), Automatica **6**, 2, pp. 289–295, March, 1970.
Jacobs O. L. R., S. M. Langdon, "An optimal extremal control system" (Brief paper), Automatica **6**, 2, pp. 297–301, March, 1970.
Ramaker B. L., C. L. Smith, P. W. Murrill, "Development of predictor models" (Brief paper), Automatica **6**, 2, pp. 303–307, March, 1970.
Panda S. P., "Controllability of discrete composite systems" (Brief paper), Automatica **6**, 2, pp. 309–313, March, 1970.
Kulikowski R., "Optimization of large-scale systems" (Survey paper), Automatica **6**, 2, pp. 315–331, March, 1970.

Glushkov V. M., Y. V. Kapitonova, A. A. Letichevsky, "Problems on automation of computer and system design" (Survey paper), Automatica **6**, 2, pp. 333–342, March, 1970.
Moylan P., J. Moore, "Tolerance of non-linearities in relay systems" (Correspondence item), Automatica **6**, 2, pp. 343–344, March, 1970.

## Volume 6, Issue 3 — May, 1970

"Obituary Rufus Oldenburger (1908–1969)" (Editorial), Automatica **6**, 3, pp. 355–356, May, 1970.
Kleinman D. L., S. Baron, W. H. Levison, "An optimal control model of human response. Part I: Theory and validation" (Regular paper), Automatica **6**, 3, pp. 357–369, May, 1970.
Baron S., D. L. Kleinman, W. H. Levison, "An optimal control model of human response. Part II: Prediction of human performance in a complex task" (Regular paper), Automatica **6**, 3, pp. 371–383, May, 1970.
Yagoda H. N., "The dynamic control of automotive traffic at a freeway entrance ramp" (Regular paper), Automatica **6**, 3, pp. 385–393, May, 1970.
Chyung D. H., E. B. Lee, "Delayed action control problems" (Regular paper), Automatica **6**, 3, pp. 395–400, May, 1970.
Julio S. de, "The optimization of dynamical systems" (Regular paper), Automatica **6**, 3, pp. 401–408, May, 1970.
Hassan M. A., K. O. Solberg, "Discrete time control of linear distributed parameter systems" (Regular paper), Automatica **6**, 3, pp. 409–417, May, 1970.
Farrell J. L., "Attitude determination by Kalman filtering" (Regular paper), Automatica **6**, 3, pp. 419–430, May, 1970.
Aoki M., R. M. Staley, "On input signals synthesis in parameter identification" (Regular paper), Automatica **6**, 3, pp. 431–440, May, 1970.
Han C. D., "Bounded-input bounded-output stability of chemical reactors" (Regular paper), Automatica **6**, 3, pp. 441–446, May, 1970.
Davison E. J., "The interaction of control systems in a binary distillation column" (Regular paper), Automatica **6**, 3, pp. 447–461, May, 1970.
Rae W. G., "Stability criteria for control systems with many non-linear elements" (Brief paper), Automatica **6**, 3, pp. 463–467, May, 1970.
Keckler W. G., R. E. Larson, "Control of a robot in a partially unknown environment" (Brief paper), Automatica **6**, 3, pp. 469–476, May, 1970.
Dressler R. M., D. W. Ross, "A simplified algorithm for suboptimal non-linear state estimation" (Brief paper), Automatica **6**, 3, pp. 477–480, May, 1970.
Davison E. J., "A computational method for finding the zeros of a multivariable linear time invariant system" (Brief paper), Automatica **6**, 3, pp. 481–484, May, 1970.
Westcott J. H., "Round table discussion: Control programming languages" (Other), Automatica **6**, 3, p. 485, May, 1970.

## Volume 6, Issue 4 — July, 1970

"The IFAC fluidics symposium" (IFAC report), Automatica **6**, 4, pp. 495–496, July, 1970.
Clark W. K., W. Lederman, M. F. Smith, "The fluidic vibrating string accelerometer" (Regular paper), Automatica **6**, 4, pp. 497–503, July, 1970.
DeCotiis C. J., R. E. Weber, "Fluidic two-axis time modulated position sensor" (Regular paper), Automatica **6**, 4, pp. 505–510, July, 1970.
Rimmer R., "Fluidic pressure ratio sensing for jet engine controls" (Regular paper), Automatica **6**, 4, pp. 511–526, July, 1970.
Davies G. E., "A fluidic method of inlet guide vane control for jet engines" (Regular paper), Automatica **6**, 4, pp. 527–534, July, 1970.
De Carli A., M. Murgo, "Mathematical model of amplitude and frequency controlled induction motor" (Regular paper), Automatica **6**, 4, pp. 535–544, July, 1970.
Hammond, Jr. M. H., H. R. Weed, "Determination of the optimal measurement sequence for a noisy pattern recognition system via the discrete maximum principle" (Regular paper), Automatica **6**, 4, pp. 545–553, July, 1970.
Handschin J. E., "Monte Carlo techniques for prediction and filtering of non-linear stochastic processes" (Regular paper), Automatica **6**, 4, pp. 555–563, July, 1970.
Mecklenburgh J. C., P. A. May, "Protran, a Fortran based computer language for process control" (Regular paper), Automatica **6**, 4, pp. 565–579, July, 1970.
Findeisen W., J. Pułaczewski, A. Manitius, "Multilevel optimization and dynamic coordination of mass flows in a beet sugar plant" (Regular paper), Automatica **6**, 4, pp. 581–589, July, 1970.
Fapiano D. J., E. Uhlen, "Automatic plate rolling at Oxelosunds Jarnverk" (Regular paper), Automatica **6**, 4, pp. 591–599, July, 1970.
Arimura T., M. Kamata, M. Saito, "An analysis of the dynamic behavior of tandem cold mills" (Brief paper), Automatica **6**, 4, pp. 601–607, July, 1970.
Le Maitre J.-F., J.-G. Paquet, J.-C. Gille, "A general approach for on-off control systems oscillations" (Brief paper), Automatica **6**, 4, pp. 609–613, July, 1970.
Andrew A. M., "A note on logically stable neural nets" (Brief paper), Automatica **6**, 4, pp. 615–620, July, 1970.
Broadbent D. T., "The IFAC multilingual dictionary of automatic control terminology" (Brief paper), Automatica **6**, 4, pp. 621–624, July, 1970.

## Volume 6, Issue 5 — September, 1970

"The Third IFAC Symposium on Automatic Control in Space: Toulouse, March 1970" (IFAC report), Automatica **6**, 5, pp. 639–642, September, 1970.
Creedon J. F., A. G. Lindgren, "Control of the optical surface of a thin, deformable primary mirror with application to an orbiting astronomical observatory" (Regular paper), Automatica **6**, 5, pp. 643–660, September, 1970.
Widnall W. S., "The minimum-time thrust-vector control law in the Apollo lunar-module autopilot" (Regular paper), Automatica **6**, 5, pp. 661–672, September, 1970.
Kowalik H., "A spin and attitude control system for the Isis-I and Isis-B satellites" (Regular paper), Automatica **6**, 5, pp. 673–682, September, 1970.
Hansen Q. M., S. J. Rusk, E. A. Gabris, "A gyroless sounding rocket control system with sub-arc-second pointing stability" (Regular paper), Automatica **6**, 5, pp. 683–694, September, 1970.
Gould L. A., L. B. Evans, H. Kurihara, "Optimal control of fluid catalytic cracking processes" (Regular paper), Automatica **6**, 5, pp. 695–703, September, 1970.
Sano A., M. Terao, "Measurement optimization in optimal process control" (Regular paper), Automatica **6**, 5, pp. 705–714, September, 1970.
Tokumaru H., N. Adachi, "On the controllability of non-linear systems" (Regular paper), Automatica **6**, 5, pp. 715–720, September, 1970.
Thathachar M. A. L., "Stability of systems with power-law non-linearities" (Regular paper), Automatica **6**, 5, pp. 721–730, September, 1970.
Sunahara Y., "Stochastic optimal control for non-linear dynamical systems under noisy observations" (Brief paper), Automatica **6**, 5, pp. 731–737, September, 1970.
Farrell J. L., "Attitude determination by Kalman filtering (Erratum and addendum)" (Other), Automatica **6**, 5, p. 745, September, 1970.

**Volume 6, Issue 6 — November, 1970**

Flügge-Lotz I., "The importance of optimal control for the practical engineer" (Regular paper), Automatica **6**, 6, pp. 749–753, November, 1970.

Scull J. R., "Mariner Mars 1969 navigation, guidance and control" (Regular paper), Automatica **6**, 6, pp. 755–766, November, 1970.

Gosiewski A., A. Wierzbicki, "Dynamic optimization of a steel-making process in electric arc furnace" (Regular paper), Automatica **6**, 6, pp. 767–778, November, 1970.

Locatelli A., S. Rinaldi, "Optimal quasi-stationary periodic processes" (Regular paper), Automatica **6**, 6, pp. 779–785, November, 1970.

Locatelli A., S. Rinaldi, "An algorithm for the determination of the optimal frequency of periodic processes" (Regular paper), Automatica **6**, 6, pp. 787–794, November, 1970.

Oza K. G., E. I. Jury, "Adaptive algorithm for identification problem" (Brief paper), Automatica **6**, 6, pp. 795–799, November, 1970.

Clark R. N., "Limit cycle oscillations in a satellite attitude control system" (Brief paper), Automatica **6**, 6, pp. 801–807, November, 1970.

Banas J. F., A. G. Vacroux, "Optimal piecewise constant control of continuous time systems with time-varying delay" (Brief paper), Automatica **6**, 6, pp. 809–811, November, 1970.

Dasarathy B. V., "Non-linear, non-autonomous systems of first order" (Brief paper), Automatica **6**, 6, pp. 813–815, November, 1970.

Vaněček A., "On 'The determination of large time constants by step-response extrapolation'" (Correspondence item), Automatica **6**, 6, pp. 817–818, November, 1970.

Axelby G. S., "A summary of the round table discussion: 'The future of IFAC'. *Held at the 4th IFAC Congress in Warsaw, Poland*" (IFAC report), Automatica **6**, 6, pp. 819–823, November, 1970.

Tsypkin Y. Z., "Applied optimal control: optimization, estimation, and control, by A. E. Bryson, Jr. and Yu-Chi Ho" (Book review), Automatica **6**, 6, pp. 825–826, November, 1970.

**Volume 7, Issue 1 — January, 1971**

Axelby G. S., "A note of appreciation" (Editorial), Automatica **7**, 1, pp. 1–3, January, 1971.

Raushenbakh B. V., J. N. Tokar, "Attitude control system of Molniya 1 communication satellite" (Regular paper), Automatica **7**, 1, pp. 7–13, January, 1971.

Legostayev V. P., I. P. Shmyglevskiy, "Control of space vehicles rendezvous at the stage of docking" (Regular paper), Automatica **7**, 1, pp. 15–24, January, 1971.

Schneider A. M., H. Koble, "Simulation and error analysis of a manual rendezvous system" (Regular paper), Automatica **7**, 1, pp. 25–36, January, 1971.

Speyer J. L., H. J. Kelley, N. Levine, W. F. Denham, "Accelerated gradient projection technique with application to rocket trajectory optimization" (Regular paper), Automatica **7**, 1, pp. 37–43, January, 1971.

Krasovsky A. A., "A new solution to the problem of a control system analytical design" (Regular paper), Automatica **7**, 1, pp. 45–50, January, 1971.

Gunchev L. A., "On the construction of the equivalent structure of a near time-optimal controller" (Regular paper), Automatica **7**, 1, pp. 51–58, January, 1971.

Zander H. J., "Method for state reduction of automata taking into account technical peculiarities of synchronous and asynchronous operational modes" (Regular paper), Automatica **7**, 1, pp. 59–71, January, 1971.

Kuntsevich V. M., Y. N. Chekhovoi, "Fundamentals of non-linear control systems with pulse-frequency and pulse-width modulation" (Regular paper), Automatica **7**, 1, pp. 73–81, January, 1971.

Astheimer R. W., "High precision attitude determination by sensing the earth and lunar horizon in the infrared" (Brief paper), Automatica **7**, 1, pp. 83–88, January, 1971.

Jury E. I., Y. Z. Tsypkin, "On the theory of discrete systems" (Survey paper), Automatica **7**, 1, pp. 89–107, January, 1971.

Sinha A. S. C., "Stability analysis of a reluctance machine" (Correspondence item), Automatica **7**, 1, pp. 109–110, January, 1971.

Thathachar M. A. L., M. K. Sundareshan, "A generalised stability multiplier" (Correspondence item), Automatica **7**, 1, pp. 111–112, January, 1971.

Shearer J. L., "Round table discussion: Applications of fluidics" (Other), Automatica **7**, 1, p. 113, January, 1971.

Rijnsdorp J. E., "Reports on 4th IFAC Congress sessions concerning process control" (IFAC report), Automatica **7**, 1, p. 115, January, 1971.

**Volume 7, Issue 2 — March, 1971**

Åström K. J., P. Eykhoff, "System identification — a survey" (Survey paper), Automatica **7**, 2, pp. 123–162, March, 1971.

Bryson, Jr. A. E., W. Kortüm, "Estimation of the local attitude of orbiting spacecraft" (Regular paper), Automatica **7**, 2, pp. 163–180, March, 1971.

Petrov B. N., "Orbital stations and studies of the earth from space" (Regular paper), Automatica **7**, 2, pp. 181–190, March, 1971.

Isermann R., "New results on the identification of processes" (Other), Automatica **7**, 2, pp. 191–197, March, 1971.

Bohlin T., "On the problem of ambiguities in maximum likelihood identification" (Regular paper), Automatica **7**, 2, pp. 199–210, March, 1971.

Wieslander J., B. Wittenmark, "An approach to adaptive control using real time identification" (Regular paper), Automatica **7**, 2, pp. 211–217, March, 1971.

Root W. L., "On the structure of a class of system identification problems" (Regular paper), Automatica **7**, 2, pp. 219–231, March, 1971.

Bertsekas D. P., I. B. Rhodes, "On the minimax reachability of target sets and target tubes" (Regular paper), Automatica **7**, 2, pp. 233–247, March, 1971.

Nikiforuk P. N., M. M. Gupta, R. Hoffman, "Crosscorrelation identification in the presence of drift" (Brief paper), Automatica **7**, 2, pp. 249–254, March, 1971.

Davison E. J., D. M. Monro, "A computational technique for finding 'bang-bang' controls of non-linear time-varying systems" (Brief paper), Automatica **7**, 2, pp. 255–260, March, 1971.

Bickart T. A., G. Prada, "Bounded input power-bounded output power stability criterion" (Brief paper), Automatica **7**, 2, pp. 261–264, March, 1971.

**Volume 7, Issue 3 — May, 1971**

Heffron, Jr. W. G., "A guidance system for the ascent of a Martian probe" (Regular paper), Automatica **7**, 3, pp. 273–285, May, 1971.

Bucy R. S., K. D. Senne, "Digital synthesis of non-linear filters" (Regular paper), Automatica **7**, 3, pp. 287–298, May, 1971.

Gura I. A., A. B. Bierman, "On computational efficiency of linear filtering algorithms" (Regular paper), Automatica **7**, 3, pp. 299–314, May, 1971.

Meditch J. S., "Least-squares filtering and smoothing for linear distributed parameter systems" (Regular paper), Automatica **7**, 3, pp. 315–322, May, 1971.

Mendes M., "An on line adaptive control method" (Regular

paper), Automatica 7, 3, pp. 323–332, May, 1971.
Isermann R., "Required accuracy of mathematical models of linear time invariant controlled elements" (Regular paper), Automatica 7, 3, pp. 333–341, May, 1971.
Tarn T. J., "Extended separation theorem and exact analytical solution of stochastic control" (Regular paper), Automatica 7, 3, pp. 343–350, May, 1971.
Dorato P., "Steady-state optimal control of finite-state machines" (Regular paper), Automatica 7, 3, pp. 351–358, May, 1971.
Melzer S. M., B. C. Kuo, "Optimal regulation of systems described by a countably infinite number of objects" (Regular paper), Automatica 7, 3, pp. 359–366, May, 1971.
Melzer S. M., B. C. Kuo, "Sampling period sensitivity of the optimal sampled data linear regulator" (Brief paper), Automatica 7, 3, pp. 367–370, May, 1971.
Robinson A. C., "A survey of optimal control of distributed-parameter systems" (Survey paper), Automatica 7, 3, pp. 371–388, May, 1971.
Steinway W. J., J. L. Melsa, "Discrete linear estimation for previous stage noise correlation" (Correspondence item), Automatica 7, 3, pp. 389–391, May, 1971.
Zeiger P., "Theory of automata, by A. Salomaa" (Book review), Automatica 7, 3, p. 393, May, 1971.

## Volume 7, Issue 4 — July, 1971

Axelby G. S., "The 1970 IFAC Kyoto Symposium on Systems Engineering Approach to Computer Control" (IFAC report), Automatica 7, 4, pp. 401–405, July, 1971.
Tenenbaum L. A., "On control processes of external respiratory parameters" (Regular paper), Automatica 7, 4, pp. 407–416, July, 1971.
Chang A., P. E. Mantey, "Optimization and computation applied to power system scheduling and control" (Regular paper), Automatica 7, 4, pp. 417–430, July, 1971.
Dessau H. R., F. B. Tuteur, "Sub-optimal design of a closed-loop least-upper-bound fuel control" (Regular paper), Automatica 7, 4, pp. 431–437, July, 1971.
Perkins W. R., P. V. Kokotović, "Deterministic parameter estimation for near-optimum feedback control" (Regular paper), Automatica 7, 4, pp. 439–444, July, 1971.
Turtle D. P., P. H. Phillipson, "Simultaneous identification and control" (Regular paper), Automatica 7, 4, pp. 445–453, July, 1971.
Singer R. A., A. J. Kanyuck, "Computer control of multiple site track correlation" (Regular paper), Automatica 7, 4, pp. 455–463, July, 1971.
Sorenson H. W., D. L. Alspach, "Recursive Bayesian estimation using Gaussian sums" (Regular paper), Automatica 7, 4, pp. 465–479, July, 1971.
Le Pourhiet A., J.-G. Paquet, "Jump phenomenon in a Van der Pol oscillator" (Regular paper), Automatica 7, 4, pp. 481–487, July, 1971.
Davison E. J., H. W. Smith, "Pole assignment in linear time-invariant multivariable systems with constant disturbances" (Regular paper), Automatica 7, 4, pp. 489–498, July, 1971.
Sato S. M., P. V. Lopresti, "New results in multivariable decoupling theory" (Regular paper), Automatica 7, 4, pp. 499–508, July, 1971.
Sawaragi Y., T. Takamatsu, K. Fukunaga, E. Nakanishi, H. Tamura' "Dynamic version of steady state optimizing" (Brief paper), Automatica 7, 4, pp. 509–516, July, 1971.
Ricker D. W., G. N. Saridis, "On-line identification of a class of non-linear systems from noisy measurements" (Brief paper), Automatica 7, 4, pp. 517–522, July, 1971.
Letov A. M., "IFAC's future" (Correspondence item), Automatica 7, 4, pp. 523–524, July, 1971.

## Volume 7, Issue 5 — September, 1971

Haeussermann W., "Saturn launch vehicle's navigation guidance, and control system" (Regular paper), Automatica 7, 5, pp. 537–556, September, 1971.
Schmidt G. T., "Closed-loop control of stochastic non-linear systems" (Regular paper), Automatica 7, 5, pp. 557–566, September, 1971.
Murtagh T. B., "Off-optimum timing of interplanetary midcourse guidance maneuvers" (Regular paper), Automatica 7, 5, pp. 567–575, September, 1971.
Brown R. J., A. P. Sage, "Error analysis of modeling and bias errors in continuous time state estimation" (Regular paper), Automatica 7, 5, pp. 577–590, September, 1971.
Moylan P. J., J. B. Moore, "Generalizations of singular optimal control theory" (Regular paper), Automatica 7, 5, pp. 591–598, September, 1971.
Chatterji B. N., B. Chatterjee, "Performance optimization of a self-organizing feedback control system in presence of inherent coupling signals" (Regular paper), Automatica 7, 5, pp. 599–605, September, 1971.
Choe H. H., P. N. Nikiforuk, "Inherently stable feedback control of a class of unknown plants" (Regular paper), Automatica 7, 5, pp. 607–625, September, 1971.
Davison E. J., E. M. Kurak, "A computational method for determining quadratic Lyapunov functions for non-linear systems" (Regular paper), Automatica 7, 5, pp. 627–636, September, 1971.
Mehra R. K., J. Peschon, "An innovations approach to fault detection and diagnosis in dynamic systems" (Correspondence item), Automatica 7, 5, pp. 637–640, September, 1971.
Sinha A. S. C., "Stability result of a sixth order non-linear system" (Correspondence item), Automatica 7, 5, pp. 641–643, September, 1971.
Athans M., "On the design of P-I-D controllers using optimal linear regulator theory" (Correspondence item), Automatica 7, 5, pp. 643–647, September, 1971.

## Volume 7, Issue 6 — November, 1971

Chirarattananon S., B. D. O. Anderson, "The fixed-lag smoother as a stable finite-dimensional linear system" (Regular paper), Automatica 7, 6, pp. 657–669, November, 1971.
Inoue K., H. Akashi, K. Ogino, Y. Sawaragi, "Sensitivity approaches to optimization of linear systems with time delay" (Regular paper), Automatica 7, 6, pp. 671–679, November, 1971.
Soliman M. A., W. H. Ray, "Optimal control of multivariable systems with pure time delays" (Regular paper), Automatica 7, 6, pp. 681–689, November, 1971.
Niederlinski A., "A heuristic approach to the design of linear multivariable interacting control systems" (Regular paper), Automatica 7, 6, pp. 691–701, November, 1971.
Nishikawa Y., N. Sannomiya, H. Itakura, "A method for suboptimal design of nonlinear feedback systems" (Regular paper), Automatica 7, 6, pp. 703–712, November, 1971.
Lekkerkerker P. J. A., T. W. Oerlemans, "Calculation method for dynamic optimization, using quadratic approximations to the minimum surface" (Regular paper), Automatica 7, 6, pp. 713–726, November, 1971.
Woodside C. M., "Estimation of the order of linear systems" (Regular paper), Automatica 7, 6, pp. 727–733, November, 1971.
Bywater R. E. H., "Digital integrator design incorporating an output scaler" (Regular paper), Automatica 7, 6, pp. 735–739, November, 1971.
Thornton B. S., "Computer aided system design of linked cooperative digital computers for control" (Brief paper),

Automatica 7, 6, pp. 741–746, November, 1971.
Nicoletti B., L. Mariani, "Optimization of non-uniformly sampled discrete systems" (Brief paper), Automatica 7, 6, pp. 747–753, November, 1971.
Courtin P., "Performance index sensitivity of minimum-fuel systems" (Brief paper), Automatica 7, 6, pp. 755–759, November, 1971.
Seborg D. E., "Comments on 'Bounded-input bounded-output stability of chemical reactors'" (Correspondence item), Automatica 7, 6, pp. 761–762, November, 1971.

## Volume 8, Issue 1 — January, 1972

Axelby G. S., "Into the fourth year" (Editorial), Automatica 8, 1, pp. 1–2, January, 1972.
Much C. H., N. P. Smith, "Satellite attitude control with a gimballed reaction wheel digital control system" (Regular paper), Automatica 8, 1, pp. 9–21, January, 1972.
MacKinnon D., P. Madden, "Path accuracy limitations of inertially based flight trajectory control system in a turbulent environment" (Regular paper), Automatica 8, 1, pp. 23–34, January, 1972.
Otomo T., T. Nakagawa, H. Akaike, "Statistical approach to computer control of cement rotary kilns" (Regular paper), Automatica 8, 1, pp. 35–48, January, 1972.
Spang, III H. A., "The structure and comparison of three real-time operating systems for process control" (Regular paper), Automatica 8, 1, pp. 49–64, January, 1972.
Padmanabhan L., S. G. Bankoff, "A direct second-variational method for unconstrained optimal control problems" (Regular paper), Automatica 8, 1, pp. 65–77, January, 1972.
Varshavsky V. I., M. V. Meleshina, A. I. Semenov, "Organizing collective behaviour in the job distribution problem" (Regular paper), Automatica 8, 1, pp. 79–84, January, 1972.
Tsypkin Y. S., "On learning systems" (Regular paper), Automatica 8, 1, pp. 85–91, January, 1972.
Wonham W. M., A. S. Morse, "Feedback invariants of linear multivariable systems" (Regular paper), Automatica 8, 1, pp. 93–100, January, 1972.
Asai K., S. Kitajima, "Optimizing control using fuzzy automata" (Brief paper), Automatica 8, 1, pp. 101–104, January, 1972.
Rijnsdorp J. E., "Multilevel systems in the petroleum industry" (Correspondence item), Automatica 8, 1, pp. 105–106, January, 1972.

## Volume 8, Issue 2 — March, 1972

Wismer D. A., C. H. Wells, "A modern approach to industrial process control" (Regular paper), Automatica 8, 2, pp. 117–125, March, 1972.
Gustavsson I., "Comparison of different methods for identification of industrial processes" (Regular paper), Automatica 8, 2, pp. 127–142, March, 1972.
Preusche G., "A two-level model following control system and its application to the power control of a steam-cooled fast reactor" (Regular paper), Automatica 8, 2, pp. 143–151, March, 1972.
Pym J. W., C. N. Shen, "Minimum time thrust start-up of a nuclear rocket with integro-differential constraints" (Regular paper), Automatica 8, 2, pp. 153–161, March, 1972.
Aoki M., "On feedback stabilizability of decentralized dynamic systems" (Regular paper), Automatica 8, 2, pp. 163–173, March, 1972.
Rappaport D., "Constant directions of the Riccati equation" (Regular paper), Automatica 8, 2, pp. 175–186, March, 1972.
Davis J. M., W. R. Perkins, "Optimal control of distributed parameter systems with separable controllers" (Brief paper), Automatica 8, 2, pp. 187–193, March, 1972.
Brogan W. L., "Distributed parameter control theory applied to the wildland fire suppression problem" (Brief paper), Automatica 8, 2, pp. 195–201, March, 1972.
Koivo H. N., E. B. Lee, "Controller synthesis for linear systems with retarded state and control variables and quadratic cost" (Brief paper), Automatica 8, 2, pp. 203–208, March, 1972.
Nishimura T., "Fixed-point smoothing of sequentially correlated processes" (Brief paper), Automatica 8, 2, pp. 209–212, March, 1972.
Bosley M. J., H. W. Kropholler, F. P. Lees, R. M. Neale, "The determination of transfer functions from state variable models" (Correspondence item), Automatica 8, 2, pp. 213–218, March, 1972.
Garrard W. L., "Suboptimal feedback control for nonlinear systems" (Correspondence item), Automatica 8, 2, pp. 219–221, March, 1972.
Schlaefli J. L., "IFAC conference report: First international symposium on traffic control. Versailles, 1–5 June 1970" (IFAC report), Automatica 8, 2, pp. 223–225, March, 1972.
Niederlinski , "A heuristic approach to the design of linear multivariable interacting control systems (Erratum)" (Other), Automatica 8, 2, p. 231, March, 1972.

## Volume 8, Issue 3 — May, 1972

"Analysis and optimization of certain qualities of controllability and observability for linear dynamical systems" (Regular paper), Automatica 8, 3, pp. 237–246, May, 1972.
Newell R. B., D. G. Fisher, "Experimental evaluation of optimal, multivariable regulatory controllers with model-following capabilities" (Regular paper), Automatica 8, 3, pp. 247–262, May, 1972.
Davison E. J., K. J. Chadha, "On the control of a large chemical plant by using modal analysis" (Regular paper), Automatica 8, 3, pp. 263–273, May, 1972.
Budynas R., C. Poli, "Three-dimensional motion of a large flexible satellite" (Regular paper), Automatica 8, 3, pp. 275–286, May, 1972.
Sholar M. S., D. M. Wiberg, "Canonical equations for boundary feedback control of stochastic distributed parameter systems" (Regular paper), Automatica 8, 3, pp. 287–298, May, 1972.
Prabhu S. S., I. McCausland, "Optimal control of linear diffusion processes with quadratic error criteria" (Regular paper), Automatica 8, 3, pp. 299–308, May, 1972.
Spang, III H. A., "A dynamic model of a cement kiln" (Regular paper), Automatica 8, 3, pp. 309–323, May, 1972.
Heller J. E., J. B. Cruz, Jr., "An algorithm for minimax parameter optimization" (Regular paper), Automatica 8, 3, pp. 325–335, May, 1972.
Haimes Y. Y., D. A. Wismer, "A computational approach to the combined problem of optimization and parameter identification" (Regular paper), Automatica 8, 3, pp. 337–347, May, 1972.
Mayne R. W., "A fluidic extremum controller" (Regular paper), Automatica 8, 3, pp. 349–356, May, 1972.
Sheng C. L., S. R. Das, "On identification of synchronous sequential machines" (Brief paper), Automatica 8, 3, pp. 357–360, May, 1972.
Hagander P., "Inversion of a dynamical system by an operator identity" (Correspondence item), Automatica 8, 3, pp. 361–362, May, 1972.
Kumar G. R. V., A. P. Sage, "Error analysis algorithms for distributed parameter filtering" (Correspondence item), Automatica 8, 3, pp. 363–366, May, 1972.

**Volume 8, Issue 4 — July, 1972**

Leondes C. T., L. M. Novak, "Optimal minimal-order observers for discrete-time systems — a unified theory" (Regular paper), Automatica **8**, 4, pp. 379–387, July, 1972.

Rissanen J., T. Kailath, "Partial realization of random systems" (Regular paper), Automatica **8**, 4, pp. 389–396, July, 1972.

Athans M., "On the determination of optimal costly measurement strategies for linear stochastic systems" (Regular paper), Automatica **8**, 4, pp. 397–412, July, 1972.

Kučera V., "On nonnegative definite solutions to matrix quadratic equations" (Regular paper), Automatica **8**, 4, pp. 413–423, July, 1972.

Fujita S., T. Fukao, "Optimal stochastic control for discrete-time linear system with interrupted observations" (Regular paper), Automatica **8**, 4, pp. 425–432, July, 1972.

Pavlin C., "Theoretical analysis of angular momentum conservation and signal transmission in a constant speed rate sensor" (Regular paper), Automatica **8**, 4, pp. 433–443, July, 1972.

Hontoir Y., J. B. Cruz, Jr., "Sensitivity reduction in linear systems" (Brief paper), Automatica **8**, 4, pp. 445–449, July, 1972.

Bailey J. E., "Optimal periodic processes in the limits of very fast and very slow cycling" (Brief paper), Automatica **8**, 4, pp. 451–454, July, 1972.

MacFarlane A. G. J., "A survey of some recent results in linear multivariable feedback theory" (Survey paper), Automatica **8**, 4, pp. 455–492, July, 1972.

Spang, III H. A., "The Third IFAC/IFIP Conference on Digital Computer Applications to Process Control" (IFAC report), Automatica **8**, 4, pp. 493–498, July, 1972.

"Industrial control computer programming — the coming age of language standards" (Correspondence item), Automatica **8**, 4, pp. 499–500, July, 1972.

Kahne S. J., "Report from Dresden. A report on the IFAC Workshop on Higher Education in Automatic Control, Dresden, 15–18 March 1971" (IFAC report), Automatica **8**, 4, pp. 513–515, July, 1972.

**Volume 8, Issue 5 — September, 1972**

Kahne S. J., G. S. Axelby, "IFAC's educational role" (Editorial), Automatica **8**, 5, p. 507, September, 1972.

Franksen O. I., "On the future in automatic control education" (Regular paper), Automatica **8**, 5, pp. 517–524, September, 1972.

Kahne S., "Formal post-graduate education in automatic control in the United States" (Regular paper), Automatica **8**, 5, pp. 525–530, September, 1972.

Cumming I. G., "On-line identification of a steel mill" (Regular paper), Automatica **8**, 5, pp. 531–541, September, 1972.

Tazaki E., A. Shindo, T. Umeda, "Decentralized optimization of a chemical process by a feasible method" (Regular paper), Automatica **8**, 5, pp. 543–554, September, 1972.

Thomas R. L., R. E. Goodson, E. J. Harter, "Adaptive computer control of a glass coating process" (Regular paper), Automatica **8**, 5, pp. 555–562, September, 1972.

Lehtinen B., J. R. Zeller, "Application of quadratic optimization to supersonic inlet control" (Regular paper), Automatica **8**, 5, pp. 563–574, September, 1972.

Kelley H. J., L. Lefton, "Supersonic aircraft energy turns" (Regular paper), Automatica **8**, 5, pp. 575–580, September, 1972.

Hontoir Y., J. B. Cruz, Jr., "A manifold imbedding algorithm for optimization problems" (Regular paper), Automatica **8**, 5, pp. 581–588, September, 1972.

Saridis G. N., T. K. Dao, "A learning approach to the parameter-adaptive self-organizing control problem" (Regular paper), Automatica **8**, 5, pp. 589–597, September, 1972.

D'Appolito J. A., C. E. Hutchinson, "A minimax approach to the design of low sensitivity state estimators" (Regular paper), Automatica **8**, 5, pp. 599–608, September, 1972.

Henry J. J., B. Laurens, B. Libertalis, "Study of the traffic flow control on the Paris A6-B6-C6 freeway complex" (Regular paper), Automatica **8**, 5, pp. 609–620, September, 1972.

Gold E. M., "System identification via state characterization" (Regular paper), Automatica **8**, 5, pp. 621–636, September, 1972.

Jamshidi M., "On the imbedding solution of a class of optimal control problems" (Brief paper), Automatica **8**, 5, pp. 637–640, September, 1972.

Earhart R. J., R. K. Cavin, III, "The serial design of tandem system observers" (Brief paper), Automatica **8**, 5, pp. 641–646, September, 1972.

Bonine K. C., "Design considerations for continuous system simulation languages" (Correspondence item), Automatica **8**, 5, pp. 647–651, September, 1972.

Isermann R., "The IFAC Symposium on the Operator, Engineer and Management Interfaces with the Process Control Computer" (IFAC report), Automatica **8**, 5, pp. 653–654, September, 1972.

MacKinnon D., P. Madden, "Path accuracy limitations of inertially based flight trajectory control system in a turbulent environment (Erratum)" (Other), Automatica **8**, 5, p. 670, September, 1972.

**Volume 8, Issue 6 — November, 1972**

Powell J. D., "Trapping — a control phenomenon of spinning drag-free satellites" (Regular paper), Automatica **8**, 6, pp. 673–682, November, 1972.

Nicholson H., R. Roebuck, "Simulation and control of electrode position controllers for electric arc furnaces" (Regular paper), Automatica **8**, 6, pp. 683–693, November, 1972.

Rosenfeld D., F. J. Evans, "Optimal control of generator resynchronisation in electric power systems" (Regular paper), Automatica **8**, 6, pp. 695–704, November, 1972.

Paynter J. D., J. S. Dranoff, S. G. Bankoff, "Optimization of a catalytic reactor subject to temperature constraints" (Regular paper), Automatica **8**, 6, pp. 705–713, November, 1972.

Tavast R., "Steady-state optimizing control of a group of chemical processes" (Regular paper), Automatica **8**, 6, pp. 715–727, November, 1972.

D'Ans G., D. Gottlieb, P. V. Kokotović, "Optimal control of bacterial growth" (Regular paper), Automatica **8**, 6, pp. 729–736, November, 1972.

Fisher D. G., R. G. Wilson, W. Agostinis, "Description and applications of a computer program for control systems design" (Regular paper), Automatica **8**, 6, pp. 737–746, November, 1972.

Snyder D. L., I. B. Rhodes, "Filtering and control performance bounds with implications on asymptotic separation" (Regular paper), Automatica **8**, 6, pp. 747–753, November, 1972.

Belle Isle A. P., F. Kozin, "On the almost-sure sample stability of systems with randomly time-varying delays" (Regular paper), Automatica **8**, 6, pp. 755–763, November, 1972.

Bosley M. J., F. P. Lees, "A survey of simple transfer-function derivations from high-order state-variable models" (Survey paper), Automatica **8**, 6, pp. 765–775, November, 1972.

Zalmanzon L. A., M. E. Limonova, "On combined use of pneumatic and hydraulic components in fluidics" (Regular paper), Automatica **8**, 6, pp. 777–781, November, 1972.

Ramar K., B. Ramaswami, "Optimal servo problems with incomplete state feedback" (Brief paper), Automatica **8**, 6,

pp. 783–791, November, 1972.
Connor M. A., "Optimal control of nonlinear time-lag systems" (Correspondence item), Automatica **8**, 6, pp. 793–795, November, 1972.
Hadimoglou H., O. L. R. Jacobs, "A note on generating certainty equivalent controls" (Correspondence item), Automatica **8**, 6, pp. 797–798, November, 1972.

**Volume 9, Issue 1 — January, 1973**

Broida V., "IFAC congress: Addresses by the outgoing and incoming presidents" (IFAC report), Automatica **9**, 1, pp. 3–5, January, 1973.
Lozier J. C., "Final address to the 5th IFAC congress" (IFAC report), Automatica **9**, 1, p. 7, January, 1973.
Stout T. M., "Economic justification of computer control systems" (Regular paper), Automatica **9**, 1, pp. 9–19, January, 1973.
Westcott J. H., G. F. Bryant, "An example of university/industrial collaboration: control of steel cold rolling" (Regular paper), Automatica **9**, 1, pp. 21–27, January, 1973.
Sarpkaya T., "A pneumatic vortex angular rate sensor – analysis and experiments" (Regular paper), Automatica **9**, 1, pp. 29–34, January, 1973.
Tippetts J. R., H. K. Ng, J. K. Royle, "A fluidic flowmeter" (Regular paper), Automatica **9**, 1, pp. 35–45, January, 1973.
Florea S., I. Dumitrache, "Fluidic devices with treshold logic" (Regular paper), Automatica **9**, 1, pp. 47–52, January, 1973.
"On parameter identification for distributed systems using Galerkin's criterion" (Regular paper), Automatica **9**, 1, pp. 53–64, January, 1973.
Stephens A. D., R. J. Richards, "Steady state and dynamic analysis of an ammonia synthesis plant" (Regular paper), Automatica **9**, 1, pp. 65–78, January, 1973.
Gertler J., G. A. Almásy, "Balance calculations through dynamic system modelling" (Regular paper), Automatica **9**, 1, pp. 79–85, January, 1973.
Rosenberg R. C., "Modeling and simulation of large-scale, linear, multiport systems" (Regular paper), Automatica **9**, 1, pp. 87–95, January, 1973.
Wolovich W. A., "The determination of state-space representations for linear multivariable systems" (Regular paper), Automatica **9**, 1, pp. 97–106, January, 1973.
Deshpande J. G., T. N. Upadhyay, D. G. Lainiotis, "Adaptive control of linear stochastic systems" (Regular paper), Automatica **9**, 1, pp. 107–115, January, 1973.
Troch I., "Sampling with arbitrary choice of the sampling instants" (Regular paper), Automatica **9**, 1, pp. 117–124, January, 1973.
Kuo B. C., D. W. Peterson, "Optimal discretization of continuous-data control system" (Brief paper), Automatica **9**, 1, pp. 125–129, January, 1973.
Sandell, Jr. N., M. Athans, "On 'type L' multivariable linear systems" (Brief paper), Automatica **9**, 1, pp. 131–136, January, 1973.
Johnson C. D., "Discussion of the paper — Experimental evaluation of optimal, multivariable regulatory controllers with model-following capabilitites, by R. B. Newell and D. G. Fisher" (Correspondence item), Automatica **9**, 1, pp. 137–138, January, 1973.
Jamshidi M., "On the imbedding solution of a class of optimal control problems (Erratum)" (Other), Automatica **9**, 1, p. 147, January, 1973.

**Volume 9, Issue 2 — March, 1973**

Meditch J. S., "A survey of data smoothing for linear and nonlinear dynamic systems" (Survey paper), Automatica **9**, 2, pp. 151–162, March, 1973.
Moore J. B., "Discrete-time fixed-lag smoothing algorithms" (Regular paper), Automatica **9**, 2, pp. 163–173, March, 1973.
Kashyap R. L., A. R. Rao, "Real time recursive prediction of river flows" (Regular paper), Automatica **9**, 2, pp. 175–183, March, 1973.
Åström K. J., B. Wittenmark, "On self tuning regulators" (Regular paper), Automatica **9**, 2, pp. 185–199, March, 1973.
Mayne D. Q., "The design of linear multivariable systems" (Regular paper), Automatica **9**, 2, pp. 201–207, March, 1973.
Eaglen C. J., M. G. Singh, J. F. Coales, "A hierarchical strategy for the temperature control of a hot strip roughing process" (Regular paper), Automatica **9**, 2, pp. 209–222, March, 1973.
Bryant G. F., J. M. Halliday, P. D. Spooner, "Tandem mill scheduling as a two point boundary value problem" (Regular paper), Automatica **9**, 2, pp. 223–232, March, 1973.
Bakan G. M., V. M. Kuntsevich, "Synthesis of an optimal control system for a primary oil refining process" (Regular paper), Automatica **9**, 2, pp. 233–242, March, 1973.
Eyles D., "Apollo LM guidance computer software for the final lunar descent" (Regular paper), Automatica **9**, 2, pp. 243–250, March, 1973.
Rink R. E., "Optimal utilization of fixed-capacity channels in feedback control" (Brief paper), Automatica **9**, 2, pp. 251–255, March, 1973.
Chan H. C., W. R. Perkins, "Optimization of time delay systems using parameter imbedding" (Brief paper), Automatica **9**, 2, pp. 257–261, March, 1973.
Ball D. J., J. R. Hewit, "An optimal control problem for a class of distributed parameter systems" (Brief paper), Automatica **9**, 2, pp. 263–267, March, 1973.
Bittanti S., G. Fronza, G. Guardabassi, "Periodic optimization of linear systems under control power constraints" (Correspondence item), Automatica **9**, 2, pp. 269–271, March, 1973.
MacFarlane A. G. J., "Round table discussion: Trends in linear multivariable theory" (Other), Automatica **9**, 2, pp. 273–277, March, 1973.
Balls B. W., "Opinions: IFAC – the way ahead" (Other), Automatica **9**, 2, p. 283, March, 1973.

**Volume 9, Issue 3 — May, 1973**

Balchen J. G., T. Endresen, M. Fjeld, T. O. Olsen, "Multivariable PID estimation and control in systems with biased disturbances" (Regular paper), Automatica **9**, 3, pp. 295–307, May, 1973.
Moore R. L., F. C. Schweppe, "Model identification for adaptive control of nuclear power plants" (Regular paper), Automatica **9**, 3, pp. 309–318, May, 1973.
Nisenfeld A. E., R. K. Miyasaki, "Applications of feedforward control to distillation columns" (Regular paper), Automatica **9**, 3, pp. 319–327, May, 1973.
Blomberg H., L. A. Golemanov, "Optimization of storage sizes and controls strategy in industrial production systems" (Regular paper), Automatica **9**, 3, pp. 329–337, May, 1973.
Kleinman D. L., S. Baron, "A control theoretic model for piloted approach to landing" (Regular paper), Automatica **9**, 3, pp. 339–347, May, 1973.
Schönwandt U., "Approximations to nonlinear observers" (Regular paper), Automatica **9**, 3, pp. 349–356, May, 1973.
Kulikowski R., "Optimum control of environment development systems" (Regular paper), Automatica **9**, 3, pp. 357–365, May, 1973.
Aggarwal J. K., "Feedback control of linear systems with

distributed delay" (Regular paper), Automatica 9, 3, pp. 367–379, May, 1973.
Tarng M. Y., L. R. Nardizzi, "A computational scheme used with the ε-technique in synthesizing optimal controls" (Regular paper), Automatica 9, 3, pp. 381–386, May, 1973.
"Fluidic control of processes with transportation lag" (Brief paper), Automatica 9, 3, pp. 387–391, May, 1973.
Biswas K. K., A. K. Mahalanabis, "A stable fixed lag smoothing algorithm" (Brief paper), Automatica 9, 3, pp. 393–397, May, 1973.
Cuypers J. G. M., "World dynamics: two simplified versions of Forrester's model" (Correspondence item), Automatica 9, 3, pp. 399–401, May, 1973.
Kelley H. J., "Some aspects of two-on-one pursuit/evasion" (Correspondence item), Automatica 9, 3, pp. 403–404, May, 1973.
Bosley M. J., F. P. Lees, "A survey of simple transfer-function derivations from high-order state-variable models (Erratum)" (Other), Automatica 9, 3, p. 411, May, 1973.

## Volume 9, Issue 4 — July, 1973

Ritch P. S., "Discrete optimal control with multiple constraints. I: Constraint separation and transformation technique" (Regular paper), Automatica 9, 4, pp. 415–429, July, 1973.
Ritch P. S., "Discrete optimal control with multiple constraints II: the batch crystallisation of sugar" (Regular paper), Automatica 9, 4, pp. 431–440, July, 1973.
Davison E. J., "The systematic design of control systems for large multivariable linear time-invariant systems" (Regular paper), Automatica 9, 4, pp. 441–452, July, 1973.
Bryant G. F., J. D. Higham, "A method for realizable non-interactive control design for a five stand cold rolling mill" (Regular paper), Automatica 9, 4, pp. 453–466, July, 1973.
Lepschy A., S. Milo, D. Torriano, "A mathematical model for the hydraulic networks of mechanical hoisting reclamations" (Regular paper), Automatica 9, 4, pp. 467–479, July, 1973.
Weischedel H. R., G. R. Westerman, "A dual-output d.c. power converter" (Regular paper), Automatica 9, 4, pp. 481–489, July, 1973.
Anderson B. D. O., "Algebraic properties of minimal degree spectral factors" (Regular paper), Automatica 9, 4, pp. 491–500, July, 1973.
Tal J., S. Kahne, "Control and component selection for incremental motion systems" (Brief paper), Automatica 9, 4, pp. 501–507, July, 1973.
Robinson P., "Time-optimal control in the presence of Poisson impulse noise" (Correspondence item), Automatica 9, 4, pp. 509–511, July, 1973.
Szaraniec E., "Stability, instability and aperiodicity tests for linear discrete systems" (Correspondence item), Automatica 9, 4, pp. 513–516, July, 1973.
Ramar K., B. Ramaswami, "Optimal servo problems with incomplete state feedback (Erratum)" (Other), Automatica 9, 4, p. 523, July, 1973.

## Volume 9, Issue 5 — September, 1973

Bereznai G. T., N. K. Sinha, "Adaptive nuclear reactor control for integral quadratic cost functions" (Regular paper), Automatica 9, 5, pp. 527–536, September, 1973.
Duyfjes G., P. M. E. M. van der Grinten, "Application of a mathematical model for the control and optimization of a distillation plant" (Regular paper), Automatica 9, 5, pp. 537–547, September, 1973.
Schoeffler J. D., L. R. Bronner, "A virtual memory organisation for minicomputer process control software" (Regular paper), Automatica 9, 5, pp. 549–559, September, 1973.
Davison E. J., "The feedforward control of linear multivariable time-invariant systems" (Regular paper), Automatica 9, 5, pp. 561–573, September, 1973.
MacFarlane A. G. J., J. J. Belletrutti, "The characteristic locus design method" (Regular paper), Automatica 9, 5, pp. 575–588, September, 1973.
Horowitz I., M. Sidi, "Synthesis of cascaded multiple-loop feedback systems with large plant parameter ignorance" (Regular paper), Automatica 9, 5, pp. 589–600, September, 1973.
Neuman C. P., A. Sen, "A suboptimal control algorithm for constrained problems using cubic splines" (Regular paper), Automatica 9, 5, pp. 601–613, September, 1973.
Goka T., T. J. Tarn, J. Zaborszky, "On the controllability of a class of discrete bilinear systems" (Regular paper), Automatica 9, 5, pp. 615–622, September, 1973.
Hagander P., "The use of operator factorization for linear control and estimation" (Brief paper), Automatica 9, 5, pp. 623–631, September, 1973.
Schmitendorf W. E., "A sufficient condition for optimal control problems with time delays" (Brief paper), Automatica 9, 5, pp. 633–637, September, 1973.
Connor M. A., "A gradient method for neutral systems" (Correspondence item), Automatica 9, 5, pp. 639–641, September, 1973.
Blomberg H., L. A. Golemanov, "Optimization of storage sizes and controls strategy in industrial production systems (Erratum)" (Other), Automatica 9, 5, p. 649, September, 1973.

## Volume 9, Issue 6 — November, 1973

Weissenberger S., "Stability regions of large-scale systems" (Regular paper), Automatica 9, 6, pp. 653–663, November, 1973.
Davison E. J., "An algorithm for the computer simulation of very large dynamic systems" (Regular paper), Automatica 9, 6, pp. 665–675, November, 1973.
Smith N. J., A. P. Sage, "A sequential method for system identification in hierarchical structure" (Regular paper), Automatica 9, 6, pp. 677–688, November, 1973.
Hamza M. H., M. A. Sheirah, "On-line identification of distributed parameter systems" (Regular paper), Automatica 9, 6, pp. 689–698, November, 1973.
Gevers M., T. Kailath, "Constant, predictable and degenerate directions of the discrete-time Riccati equation" (Regular paper), Automatica 9, 6, pp. 699–711, November, 1973.
Kamm J. L., I. L. Johnson, "A nonlinear programming approach for optimizing two-stage lifting vehicle ascent to orbit" (Brief paper), Automatica 9, 6, pp. 713–720, November, 1973.
Hostetter G. H., J. S. Meditch, "On the generalization of observers to systems with unmeasurable, unknown inputs" (Brief paper), Automatica 9, 6, pp. 721–724, November, 1973.
Tam P. K. S., D. K. S. Tam, J. B. Moore, "Fixed-lag demodulation of discrete noisy measurements of FM signals" (Brief paper), Automatica 9, 6, pp. 725–729, November, 1973.
Singh S. N., W. J. Rugh, "Weak decoupling in linear and nonlinear systems" (Brief paper), Automatica 9, 6, pp. 731–738, November, 1973.
Vathsal S., I. G. Sarma, "On the orthogonality of suboptimum estimate in the combined estimation and control problem" (Correspondence item), Automatica 9, 6, pp. 739–740, November, 1973.

## Volume 10, Issue 1 — January, 1974

Eykhoff P., "Obituary Lars Anton Hyldgaard-Jensen (14

March 1918 — 14 February 1973)" (Editorial), Automatica **10**, 1, pp. 3–4, January, 1974.
King R. P., "On-line digital computer control of slurry-conditioning in mineral flotation" (Regular paper), Automatica **10**, 1, pp. 5–14, January, 1974.
Bengtsson G., S. Lindahl, "A design scheme for incomplete state or output feedback with applications to boiler and power system control" (Regular paper), Automatica **10**, 1, pp. 15–30, January, 1974.
Erschler J., F. Roubellat, J. P. Vernhes, "Automation of a hydroelectric power station using variable-structure control systems" (Regular paper), Automatica **10**, 1, pp. 31–36, January, 1974.
Basuthakur S., C. H. Knapp, "Minimax control in substate space of a system with process uncertainty" (Regular paper), Automatica **10**, 1, pp. 37–47, January, 1974.
Hontoir Y., J. B. Cruz, Jr., "A probabilistic likelihood approach to trajectory sensitivity" (Regular paper), Automatica **10**, 1, pp. 49–60, January, 1974.
Samant V. S., H. W. Sorenson, "On reducing computational burden in the Kalman filter" (Regular paper), Automatica **10**, 1, pp. 61–68, January, 1974.
Saridis G. N., "Comparison of six on-line identification algorithms" (Regular paper), Automatica **10**, 1, pp. 69–79, January, 1974.
Isermann R., U. Baur, W. Bamberger, P. Kneppo, H. Siebert' "Comparison of six on-line identification and parameter estimation methods" (Regular paper), Automatica **10**, 1, pp. 81–103, January, 1974.
Yackel R. A., B. C. Kuo, G. Singh, "Digital redesign of continuous systems by matching of states at multiple sampling periods" (Brief paper), Automatica **10**, 1, pp. 105–111, January, 1974.
Wernersson Å, "Comments on: 'Optimal stochastic control for discrete-time linear systems with interrupted observations"' (Correspondence item), Automatica **10**, 1, pp. 113–115, January, 1974.

## Volume 10, Issue 2 — March, 1974

Gilbart J. W., G. C. Winston, "Adaptive compensation for an optical tracking telescope" (Regular paper), Automatica **10**, 2, pp. 125–131, March, 1974.
Klumpp A. R., "Apollo lunar descent guidance" (Regular paper), Automatica **10**, 2, pp. 133–146, March, 1974.
Bierman G. J., "Sequential square root filtering and smoothing of discrete linear systems" (Regular paper), Automatica **10**, 2, pp. 147–158, March, 1974.
Youla D. C., J. J. Bongiorno, Jr., C. N. Lu, "Single-loop feedback-stabilization of linear multivariable dynamical plants" (Regular paper), Automatica **10**, 2, pp. 159–173, March, 1974.
Rissanen J., "Basis of invariants and canonical forms for linear dynamic systems" (Regular paper), Automatica **10**, 2, pp. 175–182, March, 1974.
Sannuti P., "Asymptotic series solution of singularly perturbed optimal control problems" (Regular paper), Automatica **10**, 2, pp. 183–194, March, 1974.
Cuypers J. G. M., O. Rademaker, "An analysis of Forrester's world dynamics model" (Brief paper), Automatica **10**, 2, pp. 195–201, March, 1974.
Jazwinski A. H., "Adaptive sequential estimation with applications" (Brief paper), Automatica **10**, 2, pp. 203–207, March, 1974.
Wolovich W. A., H. L. Hwang, "Composite system controllability and observability" (Brief paper), Automatica **10**, 2, pp. 209–212, March, 1974.
Fujishige S., "Remarks on 'Optimal stochastic control for discrete-time linear system with interrupted observations"' (Correspondence item), Automatica **10**, 2, pp. 213–214, March, 1974.
Bos A. van den, R. Isermann, J. E. Rijnsdorp, "'Identification is coming of age...'. A report on the Third Symposium on Identification and System Parameter Estimation, The Hague, June 1973" (IFAC report), Automatica **10**, 2, pp. 215–222, March, 1974.
Godfrey K. R., G. C. Goodwin, "Industry-university confrontation on process identification" (IFAC report), Automatica **10**, 2, pp. 223–225, March, 1974.
Davison E. J., "The feedforward control of linear multivariable time-invariant systems (Erratum)" (Other), Automatica **10**, 2, p. 230, March, 1974.

## Volume 10, Issue 3 — May, 1974

Unbehauen H., B. Göhring, "Tests for determining model order in parameter estimation" (Regular paper), Automatica **10**, 3, pp. 233–244, May, 1974.
Boom A. J. W. van den, A. W. M. van den Enden, "The determination of the orders of process- and noise dynamics" (Regular paper), Automatica **10**, 3, pp. 245–256, May, 1974.
Newton, Jr. G. C., "Performance capabilities of two types of variable-reluctance stepping motors" (Regular paper), Automatica **10**, 3, pp. 257–265, May, 1974.
Bélanger P. R., "Estimation of noise covariance matrices for a linear time-varying stochastic process" (Regular paper), Automatica **10**, 3, pp. 267–275, May, 1974.
Dajani M. Z., "Performance bounds for estimation under uncertainty" (Regular paper), Automatica **10**, 3, pp. 277–283, May, 1974.
Arbib M. A., E. G. Manes, "Foundations of system theory: decomposable systems" (Regular paper), Automatica **10**, 3, pp. 285–302, May, 1974.
Dawkins G. S., D. Long, "Simulation of low thrust guidance problems" (Brief paper), Automatica **10**, 3, pp. 303–308, May, 1974.
Davison E. J., "The decentralized stabilization and control of a class of unknown non-linear time-varying systems" (Brief paper), Automatica **10**, 3, pp. 309–316, May, 1974.
Varshney R. K., W. R. Perkins, "Sensitivity of linear time invariant sampled data systems to sampling period" (Brief paper), Automatica **10**, 3, pp. 317–319, May, 1974.
Zrnić D. S., "An approximation to optimal modal control" (Brief paper), Automatica **10**, 3, pp. 321–327, May, 1974.
Davison E. J., H. W. Smith, "A note on the design of industrial regulators: integral feedback and feedforward controllers" (Correspondence item), Automatica **10**, 3, pp. 329–332, May, 1974.

## Volume 10, Issue 4 — July, 1974

Ho Y. C., K. C. Chu, "Information structure in dynamic multi-person control problems" (Regular paper), Automatica **10**, 4, pp. 341–351, July, 1974.
Landau I. D., "A survey of model reference adaptive techniques — theory and applications" (Survey paper), Automatica **10**, 4, pp. 353–379, July, 1974.
Horowitz I., J. Smay, A. Shapiro, "A synthesis theory for self-oscillating adaptive systems (SOAS)" (Regular paper), Automatica **10**, 4, pp. 381–392, July, 1974.
Schmidt G., R. Swik, "Automatic hover control of an unmanned tethered rotorplatform" (Regular paper), Automatica **10**, 4, pp. 393–403, July, 1974.
Mayne D. Q., "The effect of feedback on linear multivariable systems" (Regular paper), Automatica **10**, 4, pp. 405–412, July, 1974.
Leondes C. T., J. O. Pearson, "Suboptimal estimation of systems with large parameter uncertainties" (Regular paper), Automatica **10**, 4, pp. 413–424, July, 1974.

San Filippo F. A., P. Dorato, "Short-time parameter optimization with flight control application" (Brief paper), Automatica **10**, 4, pp. 425–430, July, 1974.

Mathiesen N. L., "Adjustment of inconsistent sets of measurements using linear programming" (Brief paper), Automatica **10**, 4, pp. 431–435, July, 1974.

Cuénod M., S. J. Kahne, "The Algiers symposium — a new role for IFAC" (IFAC report), Automatica **10**, 4, pp. 437–440, July, 1974.

Parks P. C., "Economic considerations. The first IFAC/IFORS International Conference on Dynamic Modelling and Control of National Economies. University of Warwick, Coventry, England, 9–12 July 1973" (IFAC report), Automatica **10**, 4, pp. 441–442, July, 1974.

"IFAC Symposium on Automatic Control in Mining, Mineral and Metal Processing" (IFAC report), Automatica **10**, 4, pp. 443–444, July, 1974.

Mouly R. J., "Automatic control in glass — an IFAC symposium" (IFAC report), Automatica **10**, 4, pp. 445–446, July, 1974.

**Volume 10, Issue 5 — September, 1974**

Young P., B. Beck, "The modelling and control of water quality in a river system" (Regular paper), Automatica **10**, 5, pp. 455–468, September, 1974.

Godfrey K. R., D. J. Moore, "Identification of processes having direction-dependent responses, with gas-turbine engine applications" (Regular paper), Automatica **10**, 5, pp. 469–481, September, 1974.

Landau I. D., B. Courtiol, "Design of multivariable adaptive model following control systems" (Regular paper), Automatica **10**, 5, pp. 483–494, September, 1974.

Nikiforuk P. N., M. M. Gupta, K. Kanai, "Stability analysis and design for aircraft gust alleviation control" (Regular paper), Automatica **10**, 5, pp. 495–506, September, 1974.

Brockett R. W., J. L. Willems, "Discretized partial differential equations: examples of control systems defined on modules" (Regular paper), Automatica **10**, 5, pp. 507–515, September, 1974.

Karlin A., A. Locatelli, C. Zanardini, "Trajectory insensitivity via feedback" (Regular paper), Automatica **10**, 5, pp. 517–524, September, 1974.

Korovin S. K., V. I. Utkin, "Using sliding modes in static optimization and nonlinear programming" (Regular paper), Automatica **10**, 5, pp. 525–532, September, 1974.

Tong H., "Frequency-domain approach to the regulation of linear stochastic systems" (Regular paper), Automatica **10**, 5, pp. 533–538, September, 1974.

Rao P. V., P. A. Janakiraman, "Time optimal design of discrete data systems in the frequency domain" (Brief paper), Automatica **10**, 5, pp. 539–543, September, 1974.

Wilfert H.-H., H. Maier, "Analysis of stochastically disturbed industrial plants within short measuring time" (Brief paper), Automatica **10**, 5, pp. 545–550, September, 1974.

Mee D. H., "A sensitivity analysis for control systems having input time delays" (Brief paper), Automatica **10**, 5, pp. 551–557, September, 1974.

Bierman G. J., "An efficient fixed-lag smoothing algorithm for discrete linear systems" (Brief paper), Automatica **10**, 5, pp. 559–563, September, 1974.

"Italian organizing committee report on: 5th IFAC Symposium on 'Automatic control in space', June 1973" (IFAC report), Automatica **10**, 5, pp. 565–567, September, 1974.

Locatelli A., "IFAC report on the 3rd IFAC Symposium on Sensitivity, Adaptivity and Optimality, Ischia, June 18–21, 1973" (IFAC report), Automatica **10**, 5, pp. 569–570, September, 1974.

**Volume 10, Issue 6 — November, 1974**

Axelby G. S., "About this and future issues" (Editorial), Automatica **10**, 6, p. 577, November, 1974.

Fogel M. M., L. Duckstein, C. C. Kisiel, "Optimum control of irrigation water application" (Regular paper), Automatica **10**, 6, pp. 579–586, November, 1974.

Kendrick D., J. Majors, "Stochastic control with uncertain macroeconomic parameters" (Regular paper), Automatica **10**, 6, pp. 587–593, November, 1974.

Hanson D. A., J. B. Cruz, Jr., W. R. Perkins, "Near optimal regional investment using a simultaneous equation economic model" (Regular paper), Automatica **10**, 6, pp. 595–605, November, 1974.

Jutila S. T., "Space-time modeling of macroeconomic development" (Regular paper), Automatica **10**, 6, pp. 607–615, November, 1974.

Söderström T., "Convergence properties of the generalised least squares identification method" (Regular paper), Automatica **10**, 6, pp. 617–626, November, 1974.

Alster J., P. R. Bélanger, "A technique for dual adaptive control" (Regular paper), Automatica **10**, 6, pp. 627–634, November, 1974.

Braid I. C., C. A. Lang, "Computer-aided design of mechanical components with volume building bricks" (Regular paper), Automatica **10**, 6, pp. 635–642, November, 1974.

Davison E. J., S. H. Wang, "Properties and calculation of transmission zeros of linear multivariable systems" (Regular paper), Automatica **10**, 6, pp. 643–658, November, 1974.

Gumowski I., "Sensitivity of certain dynamic systems with respect to a small delay" (Regular paper), Automatica **10**, 6, pp. 659–674, November, 1974.

Noldus E., J. Spriet, E. Verriest, A. Van Cauwenberghe, "A new Liapunov technique for stability analysis of chemical reactors" (Brief paper), Automatica **10**, 6, pp. 675–680, November, 1974.

Söderström T., "On the generalized least squares method. Counter-examples to general convergence" (Correspondence item), Automatica **10**, 6, pp. 681–683, November, 1974.

Söderström T., "Convergence of identification methods based on the instrumental variable approach" (Correspondence item), Automatica **10**, 6, pp. 685–688, November, 1974.

**Volume 11, Issue 1 — January, 1975**

"Obituary Emerita Professor Flügge-Lotz (16 July 1903 — 22 May 1974)" (Editorial), Automatica **11**, 1, p. 1, January, 1975.

Gustavsson I., "Survey of applications of identification in chemical and physical processes" (Survey paper), Automatica **11**, 1, pp. 3–24, January, 1975.

Haimes Y. Y., "Hierarchical modeling of regional total water resources systems" (Survey paper), Automatica **11**, 1, pp. 25–36, January, 1975.

Raja Rao B. V., "A survey of automatic control in the glass industry: 1961–1973" (Survey paper), Automatica **11**, 1, pp. 37–52, January, 1975.

Cegrell T., T. Hedqvist, "Successful adaptive control of paper machines" (Regular paper), Automatica **11**, 1, pp. 53–59, January, 1975.

Leondes C. T., J. F. Yocum, Jr., "Optimal observers for continuous time linear stochastic systems" (Regular paper), Automatica **11**, 1, pp. 61–73, January, 1975.

Wernli A., G. Cook, "Suboptimal control for the nonlinear quadratic regulator problem" (Regular paper), Automatica **11**, 1, pp. 75–84, January, 1975.

Callier F. M., "On the stability of convolution feedback systems with dynamical feedback" (Regular paper), Automatica **11**, 1, pp. 85–91, January, 1975.

Beattie J. R., "Automatic inspection in the glass industry" (Brief paper), Automatica **11**, 1, pp. 93–97, January, 1975.
Dannenberg K. D., J. L. Melsa, "Stability analysis of randomly sampled digital control systems" (Brief paper), Automatica **11**, 1, pp. 99–103, January, 1975.
Sundareswaran K. K., M. M. Bayoumi, "An observability problem for nonlinear discrete-data systems" (Brief paper), Automatica **11**, 1, pp. 105–108, January, 1975.
Kailath T., "Supplement to 'A survey of data smoothing'" (Correspondence item), Automatica **11**, 1, pp. 109–111, January, 1975.

## Volume 11, Issue 2 — March, 1975

"Obituary Alexandr Mikhailovich Letov" (Editorial), Automatica **11**, 2, p. 116, March, 1975.
Courtiol B., I. D. Landau, "High speed adaptation system for controlled electrical drives" (Regular paper), Automatica **11**, 2, pp. 119–127, March, 1975.
Joshi S., H. Kaufman, "Digital adaptive controllers using second order models with transport lag" (Regular paper), Automatica **11**, 2, pp. 129–139, March, 1975.
Takamatsu T., I. Hashimoto, S. Shioya, K. Mizuhara, T. Koike' H. Ohno, "Theory and practice of optimal control in continuous fermentation process" (Regular paper), Automatica **11**, 2, pp. 141–148, March, 1975.
Di Stefano, III J. J., K. C. Wilson, May Jang, P. H. Mak, "Identification of the dynamics of thyroid hormone metabolism" (Regular paper), Automatica **11**, 2, pp. 149–159, March, 1975.
Di Lorenzo R., A. Santinelli, D. Sciacovelli, "On some attitude control syntheses for satellites with flexible appendages" (Regular paper), Automatica **11**, 2, pp. 161–170, March, 1975.
Awad I., I. B. Rhodes, "Regulator problems with a cost for applying or changing control" (Regular paper), Automatica **11**, 2, pp. 171–180, March, 1975.
Gori-Giorgi C., O. M. Grasselli, "A new approach to the study of parameter insensitivity" (Regular paper), Automatica **11**, 2, pp. 181–188, March, 1975.
Payne R. L., G. C. Goodwin, M. B. Zarrop, "Frequency domain approach for designing sampling rates for system identification" (Brief paper), Automatica **11**, 2, pp. 189–191, March, 1975.
Söderström T., "On the uniqueness of maximum likelihood identification" (Brief paper), Automatica **11**, 2, pp. 193–197, March, 1975.
Murdoch P., "Pole and zero assignment by state vector feedback" (Brief paper), Automatica **11**, 2, pp. 199–201, March, 1975.
Aidarous S. E., M. A. R. Ghonaimy, "A direct method for optimization of stochastic distributed systems" (Brief paper), Automatica **11**, 2, pp. 203–207, March, 1975.
Gupta M. M., "Round table discussion on the estimation and control in fuzzy environments" (IFAC report), Automatica **11**, 2, pp. 209–212, March, 1975.
Bagchi A., "Symposium on stochastic control" (IFAC report), Automatica **11**, 2, pp. 213–217, March, 1975.
Leonhard W., "Report on IFAC Symposium on Control in Power Electronics and Electrical Drives" (IFAC report), Automatica **11**, 2, pp. 219–222, March, 1975.
Mayne D. Q., "The effect of feedback on linear multivariable systems (Erratum)" (Other), Automatica **11**, 2, p. 223, March, 1975.

## Volume 11, Issue 3 — May, 1975

Kahne S. J., G. S. Axelby, "Personal subscriptions" (Editorial), Automatica **11**, 3, p. 234, May, 1975.
Abkin M. H., T. J. Manetsch, "Simulation approach to development planning with Nigerian and Korean applications" (Regular paper), Automatica **11**, 3, pp. 235–246, May, 1975.
Emerson E. C., J. C. Field, P. R. Fouracre, R. G. Williamson, "Transport planning in Algeria: a systems approach" (Regular paper), Automatica **11**, 3, pp. 247–260, May, 1975.
Kahne S., "A procedure for optimizing development decisions" (Regular paper), Automatica **11**, 3, pp. 261–269, May, 1975.
Gottzein E., B. Lange, "Magnetic suspension control systems for the MBB high speed train" (Regular paper), Automatica **11**, 3, pp. 271–284, May, 1975.
Alspach D. L., "A Gaussian sum approach to the multi-target identification-tracking problem" (Regular paper), Automatica **11**, 3, pp. 285–296, May, 1975.
Davison E. J., P. Wong, "A robust conjugate-gradient algorithm which minimizes *L*-functions" (Regular paper), Automatica **11**, 3, pp. 297–308, May, 1975.
Aven O. I., Y. A. Kogan, "Stochastic control of paging in a two-level computer memory" (Brief paper), Automatica **11**, 3, pp. 309–313, May, 1975.
Malek-Zavarei M., M. Jamshidi, "Sensitivity of linear time-delay systems to parameter variations" (Brief paper), Automatica **11**, 3, pp. 315–319, May, 1975.
Anderson B. D. O., "Corrections to: 'Algebraic properties of minimal degree spectral factors'" (Correspondence item), Automatica **11**, 3, pp. 321–322, May, 1975.

## Volume 11, Issue 4 — July, 1975

Singh M. G., S. A. W. Drew, J. F. Coales, "Comparisons of practical hierarchical control methods for interconnected dynamical systems" (Regular paper), Automatica **11**, 4, pp. 331–350, July, 1975.
Seborg D. E., D. G. Fisher, J. C. Hamilton, "An experimental evaluation of state estimation in multivariable control systems" (Regular paper), Automatica **11**, 4, pp. 351–359, July, 1975.
Guidorzi R., "Canonical structures in the identification of multivariable systems" (Regular paper), Automatica **11**, 4, pp. 361–374, July, 1975.
Kushner H. J., E. Sanvicente, "Stochastic approximation of constrained systems with system and constraint noise" (Regular paper), Automatica **11**, 4, pp. 375–380, July, 1975.
Bonivento C., R. Guidorzi, G. Marro, "Parametric insensitivity and controlled invariance" (Regular paper), Automatica **11**, 4, pp. 381–388, July, 1975.
Šiljak D. D., "Connective stability of competitive equilibrium" (Regular paper), Automatica **11**, 4, pp. 389–400, July, 1975.
Belshaw D. G. R., T. J. Bjorlo, M. M. Shah, "A hierarchical systems formulation of the rural development process" (Regular paper), Automatica **11**, 4, pp. 401–408, July, 1975.
Viskanta R., R. E. Chupp, P. J. Hommert, J. S. Toor, "Thermal remote sensing of temperature distribution in glass" (Regular paper), Automatica **11**, 4, pp. 409–418, July, 1975.
Krishnan T., B. Ramaswami, "Slip ring induction motor speed control using a thyristor inverter" (Brief paper), Automatica **11**, 4, pp. 419–424, July, 1975.
Sen A., N. K. Sinha, "On-line system identification algorithm combining stochastic approximation and pseudoinverse" (Brief paper), Automatica **11**, 4, pp. 425–429, July, 1975.
Noldus E. J., "Computation of a lower bound of nonlinear oscillation amplitudes" (Brief paper), Automatica **11**, 4, pp. 431–435, July, 1975.

## Volume 11, Issue 5 — September, 1975

Amerongen J. van, A. J. Udink ten Cate, "Model reference adaptive autopilots for ships" (Regular paper), Automatica **11**, 5, pp. 441–449, September, 1975.
Bar-Shalom Y., E. Tse, "Tracking in a cluttered environment

with probabilistic data association" (Regular paper), Automatica **11**, 5, pp. 451–460, September, 1975.
Davison E. J., A. Goldenberg, "Robust control of a general servomechanism problem: the servo compensator" (Regular paper), Automatica **11**, 5, pp. 461–471, September, 1975.
Pau L. F., "A differential game among sectors in a macroeconomy" (Regular paper), Automatica **11**, 5, pp. 473–485, September, 1975.
Burmeister E., D. A. Graham, "Price expectations and global stability in economic systems" (Regular paper), Automatica **11**, 5, pp. 487–497, September, 1975.
Passy U., L. Silman, "One-at-a-time dynamic programming over polytope" (Regular paper), Automatica **11**, 5, pp. 499–508, September, 1975.
Ray W. H., J. H. Seinfeld, "Filtering in distributed parameter systems with moving boundaries" (Brief paper), Automatica **11**, 5, pp. 509–515, September, 1975.
Dunn K.-P., I. B. Rhodes, "Cone-bounded nonlinearities and mean-square bounds - smoothing and prediction" (Brief paper), Automatica **11**, 5, pp. 517–523, September, 1975.
Łaski J., A. Bzowy, "On the estimation of the mean of a stochastic process" (Brief paper), Automatica **11**, 5, pp. 525–527, September, 1975.
Smith P. L., "Probing signals for output constrained processes" (Brief paper), Automatica **11**, 5, pp. 529–532, September, 1975.
Bagchi A., "Continuous time systems identification with unknown noise covariance" (Brief paper), Automatica **11**, 5, pp. 533–536, September, 1975.
Söderström T., "Test of pole-zero cancellation in estimated models" (Brief paper), Automatica **11**, 5, pp. 537–541, September, 1975.
Singh M. G., A. Titli, "Closed loop hierarchical control for non-linear systems using quasilinearisation" (Brief paper), Automatica **11**, 5, pp. 541–546, September, 1975.
Başar T., "Nash strategies for $M$-person differential games with mixed information structures" (Brief paper), Automatica **11**, 5, pp. 547–551, September, 1975.
Zoerb G. C., "1974 IFAC symposium on Automatic Control for Agriculture" (IFAC report), Automatica **11**, 5, pp. 553–554, September, 1975.
Findeisen W., "Symposium on Systems Engineering Education in Developing Nations. New Delhi, 4–7 November, 1974" (IFAC report), Automatica **11**, 5, pp. 555–556, September, 1975.
Gusalov A. A., "The Sixth IFAC Symposium on Automatic Control in Space. Tsakhkadzor, Armenia, U.S.S.R., August 1974" (IFAC report), Automatica **11**, 5, pp. 557–559, September, 1975.

## Volume 11, Issue 6 — November, 1975

Tomović R., Z. Stojilković, "Multifunctional terminal device with adaptive grasping force" (Regular paper), Automatica **11**, 6, pp. 567–570, November, 1975.
Ajinkya M. B., M. Köhne, H. F. Mäder, W. H. Ray, "The experimental implementation of a distributed parameter filter" (Regular paper), Automatica **11**, 6, pp. 571–577, November, 1975.
Henson T. F., B. F. Womack, "Digital simulation by partitioning and uncoupling the system model" (Regular paper), Automatica **11**, 6, pp. 579–591, November, 1975.
Tamura H., "Decentralized optimization for distributed-lag models of discrete systems" (Regular paper), Automatica **11**, 6, pp. 593–602, November, 1975.
Liang D. F., G. S. Christensen, "Exact and approximate state estimation for nonlinear dynamic systems" (Regular paper), Automatica **11**, 6, pp. 603–612, November, 1975.
Gertler J., J. Sedlak, "Software for process control — a survey" (Survey paper), Automatica **11**, 6, pp. 613–625, November, 1975.
Olsder G. J., J. D. Powell, "Minimum thrust levels for spinning drag-free satellites" (Brief paper), Automatica **11**, 6, pp. 627–631, November, 1975.
Jamshidi M., "Optimal control of nonlinear power systems by an imbedding method" (Brief paper), Automatica **11**, 6, pp. 633–636, November, 1975.
Berkhout A. J., "Stability and least-squares estimation" (Correspondence item), Automatica **11**, 6, pp. 637–638, November, 1975.

## Volume 12, Issue 1 — January, 1976

Borisson U., R. Syding, "Self-tuning control of an ore crusher" (Regular paper), Automatica **12**, 1, pp. 1–7, January, 1976.
Åström K. J., C. G. Källström, "Identification of ship steering dynamics" (Regular paper), Automatica **12**, 1, pp. 9–22, January, 1976.
Schwartz M. W., G. L. Park, R. A. Schlueter, "Model identification using tie line power and frequency measurements" (Regular paper), Automatica **12**, 1, pp. 23–30, January, 1976.
Phatak A., H. Weinert, I. Segall, C. N. Day, "Identification of a modified optimal control model for the human operator" (Regular paper), Automatica **12**, 1, pp. 31–41, January, 1976.
Tabak D., T. S. Roy, J. W. Caron, "Identification of unknown parameters in cash flow systems of insurance" (Regular paper), Automatica **12**, 1, pp. 43–51, January, 1976.
Graupe D., E. Fogel, "A unified sequential identification structure based on convergence considerations" (Regular paper), Automatica **12**, 1, pp. 53–59, January, 1976.
Shaked U., I. Horowitz, S. Golde, "Synthesis of multivariable, basically non-interacting systems with significant plant uncertainty" (Regular paper), Automatica **12**, 1, pp. 61–71, January, 1976.
Rajbman N. S., "The application of identification models in the U.S.S.R. — a survey" (Survey paper), Automatica **12**, 1, pp. 73–95, January, 1976.
Gupta M. M., P. N. Nikiforuk, "On dynamic behaviour of stochastic systems with discontinuities in parameters" (Brief paper), Automatica **12**, 1, pp. 97–101, January, 1976.
Mikhailov F. A., "On Zadeh's block-diagram algebra" (Brief paper), Automatica **12**, 1, pp. 103–105, January, 1976.

## Volume 12, Issue 2 — March, 1976

Axelby G. S., "Format changes" (Editorial), Automatica **12**, 2, p. 111, March, 1976.
Bennett S., "The emergency of a discipline: automatic control 1940–1960" (Regular paper), Automatica **12**, 2, pp. 113–121, March, 1976.
Kokotovic P. V., R. E. O'Malley, Jr., P. Sannuti, "Singular perturbations and order reduction in control theory — an overview" (Regular paper), Automatica **12**, 2, pp. 123–132, March, 1976.
Bertsekas D. P., "Multiplier methods: a survey" (Survey paper), Automatica **12**, 2, pp. 133–145, March, 1976.
Ljung L., T. Kailath, "A unified approach to smoothing formulas" (Regular paper), Automatica **12**, 2, pp. 147–157, March, 1976.
Gilbert E. G., "Vehicle cruise: improved fuel economy by periodic control" (Regular paper), Automatica **12**, 2, pp. 159–166, March, 1976.
Brockett R. W., "Volterra series and geometric control theory" (Regular paper), Automatica **12**, 2, pp. 167–176, March, 1976.
Castanon D., M. Athans, "On stochastic dynamic Stackelberg strategies" (Regular paper), Automatica **12**, 2, pp. 177–183,

March, 1976.
Hakkala L., H. Blomberg, "On-line co-ordination under uncertainty of weakly interacting dynamical systems" (Regular paper), Automatica **12**, 2, pp. 185–193, March, 1976.
Davison E. J., S. H. Wang, "Remark on multiple transmission zeros of a system" (Correspondence item), Automatica **12**, 2, p. 195, March, 1976.

**Volume 12, Issue 3 — May, 1976**
Hughes F. M., A. Mallouppa, "Frequency response methods for nuclear station boiler control" (Regular paper), Automatica **12**, 3, pp. 201–210, May, 1976.
TyssøA., J. C. Brembo, K. Lind, "The design of a multivariable control system for a ship boiler" (Regular paper), Automatica **12**, 3, pp. 211–224, May, 1976.
Edwards W. J., A. J. Carlton, G. F. Harvey, R. F. K. Evans, P. J. McKerrow' "Coating mass control system design for a continuous galvanizing line" (Regular paper), Automatica **12**, 3, pp. 225–235, May, 1976.
Sahgal R., R. P. Webb, "Smoothing algorithms for nonlinear distributed parameter systems" (Regular paper), Automatica **12**, 3, pp. 237–244, May, 1976.
Sunahara Y., A. Ohsumi, M. Imamura, "A method of parameter identification for linear distributed parameter systems" (Regular paper), Automatica **12**, 3, pp. 245–256, May, 1976.
Kelley H. J., "Differential-turn maneuvering" (Brief paper), Automatica **12**, 3, pp. 257–259, May, 1976.
Singh M. G., M. Hassan, "Closed loop hierarchical control for river pollution" (Brief paper), Automatica **12**, 3, pp. 261–264, May, 1976.
Sidi M., "Feedback synthesis with plant ignorance, nonminimum-phase, and time-domain tolerances" (Brief paper), Automatica **12**, 3, pp. 265–271, May, 1976.
Thowsen A., W. R. Perkins, "Observability conditions for a class of mixed distributed and lumped parameter systems" (Brief paper), Automatica **12**, 3, pp. 273–275, May, 1976.
Willems J. L., J. C. Willems, "Feedback stabilizability for stochastic systems with state and control dependent noise" (Brief paper), Automatica **12**, 3, pp. 277–283, May, 1976.
Locatelli A., N. Schiavoni, "Further results on trajectory insensitivity" (Brief paper), Automatica **12**, 3, pp. 285–288, May, 1976.
Alam M. A., "Comments on: 'Successful adaptive control of paper machines"' (Correspondence item), Automatica **12**, 3, p. 289, May, 1976.
Cegrell T., T. Hedqvist, "Authors' reply to comments on 'Successful adaptive control of paper machines"' (Correspondence item), Automatica **12**, 3, p. 289, May, 1976.
Gupta M. M., E. H. Mamdani, "Second IFAC round table on fuzzy automata and decision processes" (Other), Automatica **12**, 3, pp. 291–296, May, 1976.

**Volume 12, Issue 4 — July, 1976**
Kickert W. J. M., H. R. van Nauta Lemke, "Application of a fuzzy controller in a warm water plant" (Regular paper), Automatica **12**, 4, pp. 301–308, July, 1976.
Šiljak D. D., "Multilevel stabilization of large-scale systems: a spinning flexible spacecraft" (Regular paper), Automatica **12**, 4, pp. 309–320, July, 1976.
Chong Chee-Yee, M. Athans, "On the periodic coordination of linear stochastic systems" (Regular paper), Automatica **12**, 4, pp. 321–335, July, 1976.
Polak E., "On the global stabilization of locally convergent algorithms" (Regular paper), Automatica **12**, 4, pp. 337–342, July, 1976.
Tanney J. W., H. G. Tucker, W. F. Hayes, "The evolution of some fluid measurement and control components" (Regular paper), Automatica **12**, 4, pp. 343–357, July, 1976.
Hassan M., M. G. Singh, "The optimization of non-linear systems using a new two level method" (Brief paper), Automatica **12**, 4, pp. 359–363, July, 1976.
Ferry L. H., D. Williamson, "Optimal minimal order $N$-state estimators for linear stochastic systems" (Brief paper), Automatica **12**, 4, pp. 365–369, July, 1976.
Brewer H. W., C. T. Leondes, "A treatment of nonwhite measurement noise in discrete linear systems" (Brief paper), Automatica **12**, 4, pp. 371–374, July, 1976.
Bierman G. J., "Measurement updating using $U - D$ factorization" (Brief paper), Automatica **12**, 4, pp. 375–382, July, 1976.
Bellini A., A. De Carli, M. La Cava, "Parameter identification for induction motor simulation" (Brief paper), Automatica **12**, 4, pp. 383–386, July, 1976.
Anderson B. D. O., "A note on the Youla-Bongiorno-Lu condition" (Correspondence item), Automatica **12**, 4, pp. 387–388, July, 1976.

**Volume 12, Issue 5 — September, 1976**
Unbehauen H., C. Schmid, F. Böttiger, "Comparison and application of DDC algorithms for a heat exchanger" (Regular paper), Automatica **12**, 5, pp. 393–402, September, 1976.
Hämäläinen R. P., A. Halme, "A solution of nonlinear TPBVP's occurring in optimal control" (Regular paper), Automatica **12**, 5, pp. 403–415, September, 1976.
Kunciw B. G., M. H. Kaplan, "Optimal space station detumbling by internal mass motion" (Regular paper), Automatica **12**, 5, pp. 417–425, September, 1976.
Bittner H., "Flat-earth guidance law using inflight vehicle parameter identification" (Regular paper), Automatica **12**, 5, pp. 427–443, September, 1976.
Leden B., M. H. Hamza, M. A. Sheirah, "Different methods for estimating thermal diffusivity of a heat process" (Regular paper), Automatica **12**, 5, pp. 445–456, September, 1976.
Francis B. A., W. M. Wonham, "The internal model principle of control theory" (Regular paper), Automatica **12**, 5, pp. 457–465, September, 1976.
Sebakhy O. A., W. M. Wonham, "A design procedure for multivariable regulators" (Regular paper), Automatica **12**, 5, pp. 467–478, September, 1976.
Corfmat J. P., A. S. Morse, "Decentralized control of linear multivariable systems" (Regular paper), Automatica **12**, 5, pp. 479–495, September, 1976.
Ledwich G., J. B. Moore, "Minimal stable partial realization" (Regular paper), Automatica **12**, 5, pp. 497–506, September, 1976.
Callier F. M., C. A. Desoer, "Open-loop unstable convolution feedback systems with dynamical feedbacks" (Regular paper), Automatica **12**, 5, pp. 507–518, September, 1976.
Willems J. C., "Lyapunov functions for diagonally dominant systems" (Brief paper), Automatica **12**, 5, pp. 519–523, September, 1976.
White C. C., "Finite-state, discrete-time optimization with randomly varying observation quality" (Brief paper), Automatica **12**, 5, pp. 525–528, September, 1976.
Morse A. S., "Ring models for delay-differential systems" (Brief paper), Automatica **12**, 5, pp. 529–531, September, 1976.
Axelby G. S., E. J. Davison, "On the computation of transmission zeros of linear multivariable systems" (Correspondence item), Automatica **12**, 5, pp. 533–534, September, 1976.

Guy W. F., "IFAC 6th triennial world congress explores control science solutions for global problems" (IFAC report), Automatica **12**, 5, pp. 535–536, September, 1976.
Duyfjes G., "Comments on the 6th IFAC world congress. MIT Boston, U.S.A., August 1975" (IFAC report), Automatica **12**, 5, pp. 537–538, September, 1976.
Landau I. D., H. Kaufman, "Summary of 'Adaptive control today'. A round table discussion session at IFAC/75" (IFAC report), Automatica **12**, 5, p. 539, September, 1976.
Graupe D., E. Fogel, "A unified sequential identification structure based on convergence considerations (Erratum)" (Other), Automatica **12**, 5, p. 541, September, 1976.

## Volume 12, Issue 6 — November, 1976

Hungarian NMO of IFAC The, "Obituary Otto Benedikt" (Editorial), Automatica **12**, 6, p. 547, November, 1976.
Berkovich D. M., "In memoriam Professor A. B. Cheliustkin (1913–1976)" (Editorial), Automatica **12**, 6, pp. 549–550, November, 1976.
Wall K. D., J. H. Westcott, "Policy optimisation studies using a simple U.K. economy control model" (Regular paper), Automatica **12**, 6, pp. 551–564, November, 1976.
Kaufman H., P. W. Berry, "Adaptive flight control using optimal linear regulator techniques" (Regular paper), Automatica **12**, 6, pp. 565–576, November, 1976.
Pearson A. E., "Finite time interval linear systems identification without initial state estimation" (Regular paper), Automatica **12**, 6, pp. 577–587, November, 1976.
Asher R. B., K. D. Herring, J. C. Ryles, "Bias, variance, and estimation error in reduced order filters" (Regular paper), Automatica **12**, 6, pp. 589–600, November, 1976.
Willsky A. S., "A survey of design methods for failure detection in dynamic systems" (Survey paper), Automatica **12**, 6, pp. 601–611, November, 1976.
Stark K., "Modal control of a nuclear power reactor" (Brief paper), Automatica **12**, 6, pp. 613–618, November, 1976.
Gallman Ph. G., K. S. Narendra, "Representations of nonlinear systems via the Stone-Weierstrass theorem" (Brief paper), Automatica **12**, 6, pp. 619–622, November, 1976.
Immink K. A., A. L. Nagel, "Controller design based on a limit criterion" (Brief paper), Automatica **12**, 6, pp. 623–627, November, 1976.
Arbib M. A., "Trends and focus in control" (Other), Automatica **12**, 6, pp. 629–632, November, 1976.
Klamka J., "Relative controllability of nonlinear systems with delays in control" (Correspondence item), Automatica **12**, 6, pp. 633–634, November, 1976.
Brockett R. W., E. G. Gilbert, "An addendum to Volterra series and geometric control theory" (Correspondence item), Automatica **12**, 6, p. 635, November, 1976.

## Volume 13, Issue 1 — January, 1977

Axelby G. S., "Key word indexes" (Editorial), Automatica **13**, 1, p. 1, January, 1977.
Taylor F. J., T. H. Pries, Chao-Huan Huang, "Optimal wind velocity estimation" (Regular paper), Automatica **13**, 1, pp. 3–10, January, 1977.
Ehlers H. L., J. W. Kraemer, "Shuttle orbiter guidance system for the terminal flight phase" (Regular paper), Automatica **13**, 1, pp. 11–21, January, 1977.
Bierman G. J., C. L. Thornton, "Numerical comparison of Kalman filter algorithms: orbit determination case study" (Regular paper), Automatica **13**, 1, pp. 23–35, January, 1977.
Koivo H. N., R. Cojocariu, "An optimal control for a flotation circuit" (Regular paper), Automatica **13**, 1, pp. 37–45, January, 1977.
Baas S. M., H. Kwakernaak, "Rating and ranking of multiple-aspect alternatives using fuzzy sets" (Regular paper), Automatica **13**, 1, pp. 47–58, January, 1977.
Gustavsson I., L. Ljung, T. Söderström, "Identification of processes in closed loop - identifiability and accuracy aspects" (Survey paper), Automatica **13**, 1, pp. 59–75, January, 1977.
Vermeulen P. J., D. C. J. de Jongh, "Growth in a finite world — a comprehensive sensitivity analysis" (Brief paper), Automatica **13**, 1, pp. 77–84, January, 1977.
Snyder D. L., I. B. Rhodes, E. V. Hoversten, "A separation theorem for stochastic control problems with point-process observations" (Brief paper), Automatica **13**, 1, pp. 85–87, January, 1977.
Ackermann J. E., "On the synthesis of linear control systems with specified characteristics" (Brief paper), Automatica **13**, 1, pp. 89–94, January, 1977.
Singh M. G., M. Hassan, "A two level prediction algorithm for non-linear systems" (Correspondence item), Automatica **13**, 1, pp. 95–96, January, 1977.

## Volume 13, Issue 2 — March, 1977

Axelby G. S., "The IFAC-one-publisher scheme" (Editorial), Automatica **13**, 2, pp. 105–107, March, 1977.
Davison E. J., "Connectability and structural controllability of composite systems" (Regular paper), Automatica **13**, 2, pp. 109–123, March, 1977.
Staats, Jr. P. W., J. B. Pearson, "Robust solution of the linear servomechanism problem" (Regular paper), Automatica **13**, 2, pp. 125–138, March, 1977.
Noldus E. J., "New direct Lyapunov-type method for studying synchronization problems" (Regular paper), Automatica **13**, 2, pp. 139–151, March, 1977.
Tal J., "Synchronization characteristics of controllable oscillators" (Regular paper), Automatica **13**, 2, pp. 153–159, March, 1977.
Devey W. J., C. F. Field, L. Flook, "An active nutation control system for spin stabilised satellites" (Brief paper), Automatica **13**, 2, pp. 161–172, March, 1977.
Hassan M., M. G. Singh, "Synchronous machine control using a two level model follower" (Brief paper), Automatica **13**, 2, pp. 173–176, March, 1977.
Kochhar A. K., J. Parnaby, "Dynamical modelling and control of plastics extrusion processes" (Brief paper), Automatica **13**, 2, pp. 177–183, March, 1977.
Leden B., "Multivariable dead-beat control" (Brief paper), Automatica **13**, 2, pp. 185–188, March, 1977.
Blight J. D., N. H. McClamroch, "Graphical stability criteria for nonlinear multiloop systems" (Brief paper), Automatica **13**, 2, pp. 189–192, March, 1977.
Mahapatra G. B., "Convergence properties of eigenvalues of space discretized diffusion equations" (Brief paper), Automatica **13**, 2, pp. 193–195, March, 1977.
Bristol E. H., "Pattern recognition: an alternative to parameter identification in adaptive control" (Brief paper), Automatica **13**, 2, pp. 197–202, March, 1977.

## Volume 13, Issue 3 — May, 1977

Gottzein E., K.-H. Brock, E. Schneider, J. Pfefferl, "Control aspects of a tracked magnetic levitation high speed test vehicle" (Regular paper), Automatica **13**, 3, pp. 205–223, May, 1977.
Fertik H. A., "Feedforward control of glass mold cooling" (Regular paper), Automatica **13**, 3, pp. 225–234, May, 1977.
King P. J., E. H. Mamdani, "The application of fuzzy control systems to industrial processes" (Regular paper), Automatica **13**, 3, pp. 235–242, May, 1977.
Williamson D., "Observation of bilinear systems with application to biological control" (Regular paper),

Automatica **13**, 3, pp. 243–254, May, 1977.
Clements D. J., B. D. O. Anderson, "Linear-quadratic discrete-time control and constant directions" (Regular paper), Automatica **13**, 3, pp. 255–264, May, 1977.
Brewer H. W., C. T. Leondes, "Least squares estimation of nonstationary covariance parameters in linear systems" (Regular paper), Automatica **13**, 3, pp. 265–277, May, 1977.
Cherchas D. B., R. T. Lake, "An optimal control algorithm for nuclear reactor load cycling" (Brief paper), Automatica **13**, 3, pp. 279–285, May, 1977.
Jamshidi M., M. Heidari, "Application of dynamic programming to control Khuzestan water resources system" (Brief paper), Automatica **13**, 3, pp. 287–293, May, 1977.
Wolovich W. A., R. Guidorzi, "A general algorithm for determining state-space representations" (Brief paper), Automatica **13**, 3, pp. 295–299, May, 1977.
Bohn E. V., M. K. De Beer, "Consistent parameter estimation in multi-input multi-output discrete systems" (Brief paper), Automatica **13**, 3, pp. 301–305, May, 1977.
Aldrich C., D. W. Peterson, "Quadraticity and neutrality in discrete time stochastic linear quadratic control" (Brief paper), Automatica **13**, 3, pp. 307–312, May, 1977.
Özgüner Ü., W. R. Perkins, "A series solution to the Nash strategy for large scale interconnected systems" (Correspondence item), Automatica **13**, 3, pp. 313–315, May, 1977.
Berkhout A. J., E. I. Jury, A. F. Humes, "A note on stability, least square estimation and inners" (Correspondence item), Automatica **13**, 3, pp. 317–318, May, 1977.
Haeussermann W., "The Seventh IFAC Symposium on Automatic Control in Space. Rottach-Ergen, FRG, May 1976" (IFAC report), Automatica **13**, 3, pp. 319–321, May, 1977.
Tamm B., "International Symposium on Software for Computer Control — 1976" (IFAC report), Automatica **13**, 3, pp. 323–325, May, 1977.
Davison E. J., S. H. Wang, "Properties and calculation of transmission zeros of linear multivariable systems (Erratum)" (Other), Automatica **13**, 3, p. 327, May, 1977.

## Volume 13, Issue 4 — July, 1977

Bengtsson G., "Output regulation and internal models — a frequency domain approach" (Regular paper), Automatica **13**, 4, pp. 333–345, July, 1977.
Molinari B. P., "The time-invariant linear-quadratic optimal control problem" (Regular paper), Automatica **13**, 4, pp. 347–357, July, 1977.
Yoshikawa T., "Steering law for roof type configuration control moment gyro system" (Regular paper), Automatica **13**, 4, pp. 359–368, July, 1977.
Tamura H., "Multistage linear programming for discrete optimal control with distributed-lags" (Regular paper), Automatica **13**, 4, pp. 369–376, July, 1977.
Hill D. J., P. J. Moylan, "Stability results for nonlinear feedback systems" (Regular paper), Automatica **13**, 4, pp. 377–382, July, 1977.
Perron M., A. Ramaz, "A survey of control strategies in chemical pulp plants" (Survey paper), Automatica **13**, 4, pp. 383–388, July, 1977.
Rosenbrock H. H., "The future of control" (Other), Automatica **13**, 4, pp. 389–392, July, 1977.
Mageirou E. F., Y. C. Ho, "Decentralized stabilization via game theoretic methods" (Brief paper), Automatica **13**, 4, pp. 393–399, July, 1977.
Anderson B. D. O., "An approach to multivariable system identification" (Brief paper), Automatica **13**, 4, pp. 401–408, July, 1977.
Audley D. R., "A method of constructing minimal approximate realizations of linear input-output behavior" (Brief paper), Automatica **13**, 4, pp. 409–415, July, 1977.
Sastry V. A., D. E. Seborg, R. K. Wood, "Self-tuning regulator applied to a binary distillation column" (Brief paper), Automatica **13**, 4, pp. 417–424, July, 1977.
Kleinman D. L., P. Krishna Rao, "Continuous-discrete gain transformation methods for linear feedback control" (Brief paper), Automatica **13**, 4, pp. 425–428, July, 1977.
Akashi H., H. Kumamoto, "Random sampling approach to state estimation in switching environments" (Brief paper), Automatica **13**, 4, pp. 429–434, July, 1977.
Ochiai S., "Measurement, control and simulation of an industrial liquid-liquid extractor" (Brief paper), Automatica **13**, 4, pp. 435–440, July, 1977.
Wierzbicki A. P., "Reduced gradient decomposition in multistage linear programming" (Correspondence item), Automatica **13**, 4, pp. 441–442, July, 1977.
Guardabassi G., "1976 IFAC Symposium on Large Scale Systems Theory and Applications" (IFAC report), Automatica **13**, 4, pp. 443–445, July, 1977.
Parks P. C., "Wirtschaftswunder in Wien. The 2nd IFAC/IFORS/IIASA International Conference on 'Dynamic modelling and control of national economies', Vienna, Austria, 24–27 January 1977" (IFAC report), Automatica **13**, 4, pp. 447–448, July, 1977.
Duyfjes G., "Dynamics and control of continuous distillation units, by O. Rademaker, J. E. Rijnsdorp and A. Maarleveld" (Book review), Automatica **13**, 4, pp. 449–450, July, 1977.

## Volume 13, Issue 5 — September, 1977

Coales J. F., "Obituary Victor Broïda (1907–1976)" (Editorial), Automatica **13**, 5, pp. 455–456, September, 1977.
Åström K. J., U. Borisson, L. Ljung, B. Wittenmark, "Theory and applications of self-tuning regulators" (Regular paper), Automatica **13**, 5, pp. 457–476, September, 1977.
Ng T. S., G. C. Goodwin, B. D. O. Anderson, "Identifiability of MIMO linear dynamic systems operating in closed loop" (Regular paper), Automatica **13**, 5, pp. 477–485, September, 1977.
Baur U., R. Isermann, "On-line identification of a heat exchanger with a process computer — a case study" (Regular paper), Automatica **13**, 5, pp. 487–496, September, 1977.
Garrard W. L., J. M. Jordan, "Design of nonlinear automatic flight control systems" (Regular paper), Automatica **13**, 5, pp. 497–505, September, 1977.
Ionescu T., R. Monopoli, "Discrete model reference adaptive control with an augmented error signal" (Regular paper), Automatica **13**, 5, pp. 507–517, September, 1977.
Younis M. I., W. G. Vogt, M. S. Mahmoud, "Linear estimator stabilization of nonlinear sampled-data systems" (Regular paper), Automatica **13**, 5, pp. 519–531, September, 1977.
Amrehn H., "Computer control in the polymerization industry" (Survey paper), Automatica **13**, 5, pp. 533–545, September, 1977.
Keyes M. A., "Pulp, paper and allied industry digital process control systems status and trends" (Survey paper), Automatica **13**, 5, pp. 547–551, September, 1977.
Mahapatra G. B., "On convergence properties of eigenvalues of space discretized wave equations" (Correspondence item), Automatica **13**, 5, pp. 553–554, September, 1977.

## Volume 13, Issue 6 — November, 1977

Tong R. M., "A control engineering review of fuzzy systems" (Regular paper), Automatica **13**, 6, pp. 559–569, November, 1977.
Ng T. S., G. C. Goodwin, T. Söderström, "Optimal experiment design for linear systems with input-output constraints"

(Regular paper), Automatica **13**, 6, pp. 571–577, November, 1977.
Quazza G., "Large scale control problems in electric power systems" (Survey paper), Automatica **13**, 6, pp. 579–593, November, 1977.
Becker K., "Two level attitude control for a television and broadcasting satellite" (Brief paper), Automatica **13**, 6, pp. 595–604, November, 1977.
Jayawant B. V., P. K. Sinha, "Low-speed vehicle dynamics and ride quality using controlled d.c. electromagnets" (Brief paper), Automatica **13**, 6, pp. 605–610, November, 1977.
Cavin, III R. K., S. C. Tandon, "Distributed parameter system optimum control design via finite element discretization" (Brief paper), Automatica **13**, 6, pp. 611–614, November, 1977.
Upadhyaya B. R., H. W. Sorenson, "Synthesis of linear stochastic signals in identification problems" (Brief paper), Automatica **13**, 6, pp. 615–622, November, 1977.
Nakamori S., M. Sugisaka, "Initial-value system for linear smoothing problems by covariance information" (Brief paper), Automatica **13**, 6, pp. 623–627, November, 1977.
Hassan M. F., M. Singh, "A two-level costate prediction algorithm for non-linear systems" (Brief paper), Automatica **13**, 6, pp. 629–634, November, 1977.
Simaan M., "Equilibrium properties of the Nash and Stackelberg strategies" (Correspondence item), Automatica **13**, 6, pp. 635–636, November, 1977.

## Volume 14, Issue 1 — January, 1978

Al-Shaikh A., N. Leffler, "Application of multi-level control of calendars in the tire industry" (Regular paper), Automatica **14**, 1, pp. 1–18, January, 1978.
Axelby G. S., "Into the 21st year" (Editorial), Automatica **14**, 1, p. 1, January, 1978.
Chu Kai-Ching, M. Jamshidi, R. E. Levitan, "Real-time urban power dispatch with ambient air quality constraints" (Regular paper), Automatica **14**, 1, pp. 19–30, January, 1978.
Mahmoud M. S., "Optimal control of constrained problems by the costate coordination structure" (Regular paper), Automatica **14**, 1, pp. 31–40, January, 1978.
Bekey G. A., J. E. W. Beneken, "Identification of biological systems: a survey" (Survey paper), Automatica **14**, 1, pp. 41–47, January, 1978.
Luoto U., "IFAC — 20 years old; 20 years young. Preface" (IFAC report), Automatica **14**, 1, p. 50, January, 1978.
Eykhoff P., "IFAC — 20 years old; 20 years young. IFAC is coming of age..." (IFAC report), Automatica **14**, 1, pp. 51–52, January, 1978.
Oldenburger R., "IFAC — 20 years old; 20 years young. IFAC, from idea to birth" (IFAC report), Automatica **14**, 1, pp. 53–55, January, 1978.
Chestnut H., "IFAC — 20 years old; 20 years young. IFAC got started at a good time" (IFAC report), Automatica **14**, 1, pp. 56–58, January, 1978.
Gerecke E., "IFAC — 20 years old; 20 years young. Theory and mathematical methods of automatic control until 1963" (IFAC report), Automatica **14**, 1, pp. 59–61, January, 1978.
Nowacki P. J., "IFAC — 20 years old; 20 years young. President's memoirs" (IFAC report), Automatica **14**, 1, p. 62, January, 1978.
Nowacki P. J., "IFAC — 20 years old; 20 years young. The importance of automatic control" (IFAC report), Automatica **14**, 1, pp. 63–68, January, 1978.
Axelby G. S., "IFAC — 20 years old; 20 years young. IFAC publications" (IFAC report), Automatica **14**, 1, pp. 69–71, January, 1978.
"IFAC — 20 years old; 20 years young. How IFAC developed" (IFAC report), Automatica **14**, 1, pp. 73–75, January, 1978.
Sharp J. K., W. R. Perkins, "A new approach to dynamic input-output models" (Brief paper), Automatica **14**, 1, pp. 77–79, January, 1978.
Altshuler D., A. H. Haddad, "Near optimal smoothing for singularly perturbed linear systems" (Brief paper), Automatica **14**, 1, pp. 81–87, January, 1978.
Wellstead P. E., "An instrumental product moment test for model order estimation" (Correspondence item), Automatica **14**, 1, pp. 89–91, January, 1978.
Ramarajan S., K. L. P. Mishra, "System stability with combined derivative constraints on time varying gains" (Correspondence item), Automatica **14**, 1, pp. 93–94, January, 1978.
Mahapatra G. B., "Eigenvalue convergence properties of spatially discretised partial differential equations" (Correspondence item), Automatica **14**, 1, pp. 95–97, January, 1978.
Singh M., M. F. Hassan, "Hierarchical optimisation for non-linear dynamical systems with non-separable cost functions" (Correspondence item), Automatica **14**, 1, pp. 99–101, January, 1978.

## Volume 14, Issue 2 — March, 1978

Fjeld M., "Application of modern control concepts on a Kraft paper machine" (Regular paper), Automatica **14**, 2, pp. 107–117, March, 1978.
Pau L. F., "A controlled linearized Kalman filter for economic forecasting and adaptive modelling" (Regular paper), Automatica **14**, 2, pp. 119–128, March, 1978.
Rajbman N. S., "Minimax identification" (Regular paper), Automatica **14**, 2, pp. 129–135, March, 1978.
Bohlin T., "Maximum-power validation of models without higher-order fitting" (Regular paper), Automatica **14**, 2, pp. 137–146, March, 1978.
Evans M. E., D. N. P. Murthy, "Controllability of discrete time inhomogeneous bilinear systems" (Brief paper), Automatica **14**, 2, pp. 147–151, March, 1978.
Khalil H. K., "Control of linear singularly perturbed systems with colored noise disturbance" (Brief paper), Automatica **14**, 2, pp. 153–156, March, 1978.
Burmeister E., "Uniqueness of rest points for optimal control models in economics" (Brief paper), Automatica **14**, 2, pp. 157–160, March, 1978.
Simaan M., T. Takayama, "Game theory applied to dynamic duopoly problems with production constraints" (Brief paper), Automatica **14**, 2, pp. 161–166, March, 1978.
Jamshidi M., "An imbedded initialization of Newton's algorithm for matrix Riccati equation" (Brief paper), Automatica **14**, 2, pp. 167–170, March, 1978.
Langholz G., A. Hoffman, "Lower bounds on the quadratic cost of optimal regulators" (Brief paper), Automatica **14**, 2, pp. 171–175, March, 1978.
Hassan M., R. Hurteau, M. G. Singh, A. Titli, "A three level costate prediction method for continuous dynamical systems" (Brief paper), Automatica **14**, 2, pp. 177–181, March, 1978.
Parks P. C., "Coventry Blues. The 2nd Symposium on Control of Distributed Parameter Systems, University of Warwick, Coventry, England, 28 June-1 July, 1977" (IFAC report), Automatica **14**, 2, pp. 183–184, March, 1978.
"Report on the 1977 IFAC/IFIP Workshop on Real Time Programming. 20–22 June, Eindhoven, Netherlands" (IFAC report), Automatica **14**, 2, pp. 185–187, March, 1978.
Withers R. M. J., J. E. Rijnsdorp, "Work of the social effects of automation committee from Bad Boll to Enschede" (IFAC report), Automatica **14**, 2, pp. 189–191, March, 1978.

**Volume 14, Issue 3 — May, 1978**

Gertler J., "Obituary Frigyes Csáki (1921–1977)" (Editorial), Automatica **14**, 3, p. 197, May, 1978.

Lions J.-L., "Asymptotic methods in the optimal control of distributed systems" (Regular paper), Automatica **14**, 3, pp. 199–211, May, 1978.

TyssøA., J. C. Brembo, "Installation and operation of a multivariable ship boiler control system" (Regular paper), Automatica **14**, 3, pp. 213–221, May, 1978.

Bamberger W., R. Isermann, "Adaptive on-line steady-state optimization of slow dynamic processes" (Regular paper), Automatica **14**, 3, pp. 223–230, May, 1978.

Söderström T., L. Ljung, I. Gustavsson, "A theoretical analysis of recursive identification methods" (Regular paper), Automatica **14**, 3, pp. 231–244, May, 1978.

Hedelin P., "Discrete-time estimation in continuous-time communication systems" (Regular paper), Automatica **14**, 3, pp. 245–254, May, 1978.

Schoute F. C., "Symmetric team problems and multi access wire communication" (Regular paper), Automatica **14**, 3, pp. 255–269, May, 1978.

Chow J. H., J. J. Allemong, P. V. Kokotovic, "Singular perturbation analysis of systems with sustained high frequency oscillations" (Regular paper), Automatica **14**, 3, pp. 271–279, May, 1978.

Ray W. H., "Some recent applications of distributed parameter systems theory — a survey" (Survey paper), Automatica **14**, 3, pp. 281–287, May, 1978.

Rademaker O., "Digital computer applications to process control. Summary of round-table discussions, 5th IFAC/IFIP international conference; The Hague, The Netherlands, June 1977" (IFAC report), Automatica **14**, 3, pp. 289–291, May, 1978.

Atherton D. P., "The Fourth IFAC Symposium on Multivariable Technological Systems. Fredericton, N.B., Canada, 4–7 July 1977" (IFAC report), Automatica **14**, 3, pp. 293–295, May, 1978.

Gottinger H. W., "Acknowledgement of priority" (Other), Automatica **14**, 3, p. 299, May, 1978.

**Volume 14, Issue 4 — July, 1978**

Stengel R. F., J. R. Broussard, P. W. Berry, "Digital flight control design for a tandem-rotor helicopter" (Regular paper), Automatica **14**, 4, pp. 301–312, July, 1978.

Beneš J., P. Kolář, "Automatic cooperative control of a group of mobiles" (Regular paper), Automatica **14**, 4, pp. 313–323, July, 1978.

Choi C. Y., D. D. Perlmutter, "Optimal contaminant removal in fermentation and waste treatment processes" (Regular paper), Automatica **14**, 4, pp. 325–333, July, 1978.

Lausterer G. K., W. H. Ray, H. R. Martens, "Real time distributed parameter state estimation applied to a two dimensional heated ingot" (Regular paper), Automatica **14**, 4, pp. 335–344, July, 1978.

España M., I. D. Landau, "Reduced order bilinear models for distillation columns" (Regular paper), Automatica **14**, 4, pp. 345–355, July, 1978.

Clancy S. J., W. J. Rugh, "On the realization problem for stationary, homogeneous, discrete-time systems" (Regular paper), Automatica **14**, 4, pp. 357–366, July, 1978.

Holmes Ph., J. Marsden, "Bifurcation to divergence and flutter in flow-induced oscillations: an infinite dimensional analysis" (Regular paper), Automatica **14**, 4, pp. 367–384, July, 1978.

Delfour M. C., E. B. Lee, A. Manitius, "*F*-reduction of the operator Riccati equation for hereditary differential systems" (Regular paper), Automatica **14**, 4, pp. 385–395, July, 1978.

Rubinstein H., "Smoothing properties of discrete-time zero-lag Kalman filter" (Brief paper), Automatica **14**, 4, pp. 397–401, July, 1978.

Axelby G. S., A. J. Laub, E. J. Davison, "Further discussion on the calculation of transmission zeros" (Correspondence item), Automatica **14**, 4, pp. 403–405, July, 1978.

Bar-Shalom Y., S. B. Gershwin, "Applicability of adaptive control to real problems - trends and opinions" (Correspondence item), Automatica **14**, 4, pp. 407–408, July, 1978.

**Volume 14, Issue 5 — September, 1978**

Richalet J., A. Rault, J. L. Testud, J. Papon, "Model predictive heuristic control: applications to industrial processes" (Regular paper), Automatica **14**, 5, pp. 413–428, September, 1978.

Edwards W. J., "Design of entry strip thickness controls for tandem cold mills" (Regular paper), Automatica **14**, 5, pp. 429–441, September, 1978.

Breton A., A. Haurie, R. Kalocsai, "Efficient management of interconnected power systems: a game-theoretic approach" (Regular paper), Automatica **14**, 5, pp. 443–452, September, 1978.

Hamza M. H., M. A. Sheirah, "A self-tuning regulator for distributed parameter systems" (Regular paper), Automatica **14**, 5, pp. 453–463, September, 1978.

Rissanen J., "Modeling by shortest data description" (Regular paper), Automatica **14**, 5, pp. 465–471, September, 1978.

Luenberger D. G., "Time-invariant descriptor systems" (Regular paper), Automatica **14**, 5, pp. 473–480, September, 1978.

Scott R. W., B. D. O. Anderson, "Least order, stable solution of the exact model matching problem" (Regular paper), Automatica **14**, 5, pp. 481–492, September, 1978.

Aborhey S., D. Williamson, "State and parameter estimation of microbial growth processes" (Brief paper), Automatica **14**, 5, pp. 493–498, September, 1978.

Saelid S., "Observability theorems for some linear hyperbolic systems" (Brief paper), Automatica **14**, 5, pp. 499–503, September, 1978.

Moore J. B., "On strong consistency of least squares identification algorithms" (Brief paper), Automatica **14**, 5, pp. 505–509, September, 1978.

Willems J. L., H. Van de Voorde, "The return difference for discrete-time optimal feedback systems" (Brief paper), Automatica **14**, 5, pp. 511–513, September, 1978.

Gesing W. S., E. J. Davison, "Improvements on a robust conjugate-gradient algorithm which minimizes *cal L*-functions" (Correspondence item), Automatica **14**, 5, pp. 515–516, September, 1978.

Nair G. G., "Suboptimal control of nonlinear systems" (Correspondence item), Automatica **14**, 5, pp. 517–519, September, 1978.

**Volume 14, Issue 6 — November, 1978**

Keviczky L., J. Hetthéssy, M. Hilger, J. Kolostori, "Self-tuning adaptive control of cement raw material blending" (Regular paper), Automatica **14**, 6, pp. 525–532, November, 1978.

Cherchas D. B., S. S. Ng, "Optimum control of neutron flux during nuclear station load following" (Regular paper), Automatica **14**, 6, pp. 533–546, November, 1978.

Kortela U. K. J., T. J. Niemi, "Modelling and prediction of copper concentration of a grinding process" (Regular paper), Automatica **14**, 6, pp. 547–556, November, 1978.

Laub A. J., B. C. Moore, "Calculation of transmission zeros using QZ techniques" (Regular paper), Automatica **14**, 6, pp. 557–566, November, 1978.

Rustem B., K. Velupillai, J. H. Westcott, "Respecifying the

weighting matrix of a quadratic objective function" (Regular paper), Automatica **14**, 6, pp. 567–582, November, 1978.
Koda M., J. H. Seinfeld, "Estimation of urban air pollution" (Regular paper), Automatica **14**, 6, pp. 583–595, November, 1978.
Tokumaru H., O. Habata, "Prediction of pollution levels by mixed order multi-variable AR scheme" (Brief paper), Automatica **14**, 6, pp. 597–601, November, 1978.
Amouroux M., J. P. Babary, A. El Jai, "Adaptive open loop control for a class of distributed parameter systems" (Brief paper), Automatica **14**, 6, pp. 603–607, November, 1978.
Gauthier A., I. D. Landau, "On the recursive identification of multi-input, multi-output systems" (Brief paper), Automatica **14**, 6, pp. 609–614, November, 1978.
Anderson B. D. O., J. B. Moore, R. M. Hawkes, "Model approximations via prediction error identification" (Brief paper), Automatica **14**, 6, pp. 615–622, November, 1978.
Yoshikawa T., H. Kobayashi, "Separation of estimation and control for decentralized stochastic control systems" (Brief paper), Automatica **14**, 6, pp. 623–628, November, 1978.
Kaaz M. A., "The Second IFAC Symposium on Control in Power Electronics and Electrical Drives. Düsseldorf, 3–5 October 1977" (IFAC report), Automatica **14**, 6, pp. 629–632, November, 1978.

## Volume 15, Issue 1 — January, 1979

"Obituary Giorgio Quazza (1924–1978)" (Editorial), Automatica **15**, 1, pp. 1–2, January, 1979.
Axelby G. S., "New decade — new image" (Editorial), Automatica **15**, 1, pp. 3–4, January, 1979.
Wonham W. M., "Geometric state-space theory in linear multivariable control: a status report" (Regular paper), Automatica **15**, 1, pp. 5–13, January, 1979.
Procyk T. J., E. H. Mamdani, "A linguistic self-organizing process controller" (Regular paper), Automatica **15**, 1, pp. 15–30, January, 1979.
Irving E., J. P. Barret, C. Charcossey, J. P. Monville, "Improving power network stability and unit stress with adaptive generator control" (Regular paper), Automatica **15**, 1, pp. 31–46, January, 1979.
Mummé K. I., "Cyclic control of water quality in a tidal river segment" (Regular paper), Automatica **15**, 1, pp. 47–57, January, 1979.
Haimes Y. Y., V. Chankong, "Kuhn-Tucker multipliers as trade-offs in multiobjective decision-making analysis" (Regular paper), Automatica **15**, 1, pp. 59–72, January, 1979.
Pearson A. E., "Nonlinear system identification with limited time data" (Regular paper), Automatica **15**, 1, pp. 73–84, January, 1979.
Wittenmark B., "A two-level estimator for time varying parameters" (Brief paper), Automatica **15**, 1, pp. 85–89, January, 1979.
Badr O., D. Rey, P. Ladet, "On the dual-adaptive control and its practical applications" (Brief paper), Automatica **15**, 1, pp. 91–96, January, 1979.
Harris E. L., "Using discrete models with continuous design packages" (Brief paper), Automatica **15**, 1, pp. 97–100, January, 1979.
Jamshidi M., M. Malek-Zavarei, I. Vakilzadeh, "Problems of automatic control education in developing countries" (Other), Automatica **15**, 1, pp. 105–112, January, 1979.
Lemmens W. J. M., A. J. W. van den Boom, "Interactive computer programs for education and research: a survey" (Other), Automatica **15**, 1, pp. 113–121, January, 1979.
Yonezawa K., "Comments on: 'Exact and approximate state estimation for nonlinear dynamic systems'" (Correspondence item), Automatica **15**, 1, p. 123, January, 1979.
Liang D. F., G. S. Christensen, "Comments on: 'Exact and approximate state estimation for nonlinear dynamic systems'. Author's reply" (Correspondence item), Automatica **15**, 1, p. 124, January, 1979.
Mora-Camino F., "Comments on: 'Optimisation of non-linear systems using a new two level method'" (Correspondence item), Automatica **15**, 1, pp. 125–126, January, 1979.
Singh. M. G., M. Hassan, "Comments on: 'Optimisation of non-linear systems using a new two level method'. Authors' reply" (Correspondence item), Automatica **15**, 1, pp. 126–128, January, 1979.
Galtung F. L., "IFAC/IFIP Symposium on Automation in Offshore Oil Field Operation. Bergen, Norway, June, 1976" (IFAC report), Automatica **15**, 1, pp. 129–131, January, 1979.

## Volume 15, Issue 2 — March, 1979

Billings S. A., F. M. Boland, H. Nicholson, "Electric arc furnace modelling and control" (Regular paper), Automatica **15**, 2, pp. 137–148, March, 1979.
Jeffreson C. P., "Feedforward control of blast furnace stoves" (Regular paper), Automatica **15**, 2, pp. 149–159, March, 1979.
Marmarelis V. Z., "Error analysis and optimal estimation procedures in identification of nonlinear Volterra systems" (Regular paper), Automatica **15**, 2, pp. 161–174, March, 1979.
Gesing W., E. J. Davison, "An exact penalty function algorithm for solving general constrained parameter optimization problems" (Regular paper), Automatica **15**, 2, pp. 175–188, March, 1979.
Grasselli O. M., A. Isidori, F. Nicolo, "Output regulation of a class of bilinear systems under constant disturbances" (Regular paper), Automatica **15**, 2, pp. 189–195, March, 1979.
Khalil H. K., P. V. Kokotovic, "Control of linear systems with multiparameter singular perturbations" (Regular paper), Automatica **15**, 2, pp. 197–207, March, 1979.
Borison U., "Self-tuning regulators for a class of multivariable systems" (Brief paper), Automatica **15**, 2, pp. 209–215, March, 1979.
Akashi H., H. Imai, K. A. F. Moustafa, "Parameter identification technique for multivariate stochastic systems" (Brief paper), Automatica **15**, 2, pp. 217–221, March, 1979.
Toivonen H., T. Westerlund, "Comments on 'Self-tuning regulator applied to a binary distillation column'" (Correspondence item), Automatica **15**, 2, pp. 223–224, March, 1979.
Seborg D. E., R. K. Wood, "A reply to 'Comments on Self-tuning regulator applied to a binary distillation column'" (Correspondence item), Automatica **15**, 2, p. 225, March, 1979.
Toivonen H., T. Westerlund, "A reply to 'Comments on Self-tuning regulator applied to a binary distillation column'. Reply" (Correspondence item), Automatica **15**, 2, p. 226, March, 1979.
Sawaragi Y., H. Akashi, "IFAC Symposium on Environmental Systems Planning, Design and Control" (IFAC report), Automatica **15**, 2, pp. 227–230, March, 1979.
Reinisch K., "Final report on IFAC Symposium on Control Mechanisms in Bio- and Ecosystems. September 1977 in Leipzig, GDR" (IFAC report), Automatica **15**, 2, pp. 231–232, March, 1979.
Reinisch K., "Final report on 2nd IFAC Symposium on Discrete Systems. March 1977 in Dresden, GDR" (IFAC report), Automatica **15**, 2, pp. 233–235, March, 1979.

**Volume 15, Issue 3 — May, 1979**

Källström C. G., K. J. Åström, N. E. Thorell, J. Eriksson, L. Sten' "Adaptive autopilots for tankers" (Regular paper), Automatica **15**, 3, pp. 241–254, May, 1979.

Ohtsu K., M. Horigome, G. Kitagawa, "A new ship's auto pilot design through a stochastic model" (Regular paper), Automatica **15**, 3, pp. 255–268, May, 1979.

Bruun N. G., M. Kümmel, "Multiloop, feedforward, modal and optimal control of an evaporator" (Regular paper), Automatica **15**, 3, pp. 269–280, May, 1979.

Gray J. O., P. M. Taylor, "Computer aided design of multivariable nonlinear control systems using frequency domain techniques" (Regular paper), Automatica **15**, 3, pp. 281–297, May, 1979.

Morf M., J. R. Dobbins, B. Friedlander, T. Kailath, "Square-root algorithms for parallel processing in optimal estimation" (Regular paper), Automatica **15**, 3, pp. 299–306, May, 1979.

Davison E. J., W. Gesing, "Sequential stability and optimization of large scale decentralized systems" (Regular paper), Automatica **15**, 3, pp. 307–324, May, 1979.

Biran Y., B. McInnis, "Optimal control of bilinear systems: time-varying effects of cancer drugs" (Brief paper), Automatica **15**, 3, pp. 325–329, May, 1979.

Akashi H., H. Kumamoto, "Optimal sulfur dioxide gas discharge control for Osaka City, Japan" (Brief paper), Automatica **15**, 3, pp. 331–337, May, 1979.

Leininger G. G., "Diagonal dominance for multivariate Nyquist array methods using function minimization" (Brief paper), Automatica **15**, 3, pp. 339–345, May, 1979.

Ichikawa A., E. P. Ryan, "Sensor and controller location problems for distributed parameter systems" (Brief paper), Automatica **15**, 3, pp. 347–352, May, 1979.

Gertler J., "A constrained minimum variance input-output estimator for linear dynamic systems" (Brief paper), Automatica **15**, 3, pp. 353–358, May, 1979.

Quadrat J. P., "The IRIA-IFAC Workshop on Singular Perturbations in Control. IRIA, Domaine de Voluceau, Rocquencourt, France, 5–7 June, 1978" (IFAC report), Automatica **15**, 3, p. 359, May, 1979.

Axelby G. S., Et Al., "IFAC reports on the 7th Congress, Helsinki, Finland, 1978" (IFAC report), Automatica **15**, 3, pp. 361–378, May, 1979.

Graupe D., E. Fogel, "A unified sequential identification structure based on convergence considerations (Addendum and Erratum)" (Other), Automatica **15**, 3, p. 383, May, 1979.

**Volume 15, Issue 4 — July, 1979**

Axelby G. S., "Technical communiques" (Editorial), Automatica **15**, 4, p. 385, July, 1979.

Takamatsu T., I. Hashimoto, Y. Nakai, "A geometric approach to multivariable control system design of a distillation column" (Regular paper), Automatica **15**, 4, pp. 387–402, July, 1979.

Kelley H. J., J. Shinar, D. Bar-Moshe, "Variable-sweep optimization" (Regular paper), Automatica **15**, 4, pp. 403–409, July, 1979.

Kučera V., "Design of steady-state minimum variance controllers" (Regular paper), Automatica **15**, 4, pp. 411–418, July, 1979.

Aplevich J. D., "Tableau methods for analysis and design of linear systems" (Regular paper), Automatica **15**, 4, pp. 419–429, July, 1979.

Martin D. H., D. H. Jacobson, "Optimal control laws for a class of constrained linear-quadratic problems" (Regular paper), Automatica **15**, 4, pp. 431–440, July, 1979.

Sawaragi Y., T. Soeda, H. Tamura, T. Yoshimura, S. Ohe' Et Al., "Statistical prediction of air pollution levels using non-physical models" (Regular paper), Automatica **15**, 4, pp. 441–451, July, 1979.

Iliadis A., A. Cheruy, J. Daver, P. Desnoyers, "Mathematical modeling and equilibrium analysis of the coagulolytic system" (Regular paper), Automatica **15**, 4, pp. 453–459, July, 1979.

Schulz G., "Active multivariable vibration isolation for a helicopter" (Brief paper), Automatica **15**, 4, pp. 461–466, July, 1979.

Sandell, Jr. N. R., "Robust stability of systems with application to singular perturbations" (Brief paper), Automatica **15**, 4, pp. 467–470, July, 1979.

Sinha N. K., Y. H. Kwong, "Recursive estimation of the parameters of linear multivariable systems" (Brief paper), Automatica **15**, 4, pp. 471–475, July, 1979.

Tugnait J. K., A. H. Haddad, "A detection-estimation scheme for state estimation in switching environments" (Brief paper), Automatica **15**, 4, pp. 477–481, July, 1979.

Hassan M. F., M. G. Singh, A. Titli, "Near optimal decentralised control with a pre-specified degree of stability" (Brief paper), Automatica **15**, 4, pp. 483–488, July, 1979.

Geromel J. C., J. Bernussou, "An algorithm for optimal decentralized regulation of linear quadratic interconnected systems" (Technical Communiqué), Automatica **15**, 4, pp. 489–491, July, 1979.

Candy J. V., T. E. Bullock, M. E. Warren, "Invariant system description of the stochastic realization" (Technical Communiqué), Automatica **15**, 4, pp. 493–495, July, 1979.

Schmidt D. J., "Discussion of 'Square root algorithms for parallel processing in optimal estimation"' (Correspondence item), Automatica **15**, 4, p. 497, July, 1979.

Morf M., T. Kailath, J. R. Dobbins, B. Friedlander, J. Newkirk' "Reply to Discussion of 'Square root algorithms for parallel processing in optimal estimation"' (Correspondence item), Automatica **15**, 4, p. 499, July, 1979.

**Volume 15, Issue 5 — September, 1979**

Saridis G. N., D. M. Brandin, "An automatic surface inspection system for flat rolled steel" (Regular paper), Automatica **15**, 5, pp. 505–520, September, 1979.

Minato K., M. Kuwahara, Y. Yonekura, A. Hirakawa, "Parameter estimation of radiocardiogram using a minicomputer" (Regular paper), Automatica **15**, 5, pp. 521–529, September, 1979.

Polak E., "Algorithms for a class of computer-aided design problems: a review" (Regular paper), Automatica **15**, 5, pp. 531–538, September, 1979.

Sinha P. K., B. V. Jayawant, "Analytical and design aspects of magnetically suspended vehicles" (Regular paper), Automatica **15**, 5, pp. 539–552, September, 1979.

Braae M., D. A. Rutherford, "Theoretical and linguistic aspects of the fuzzy logic controller" (Regular paper), Automatica **15**, 5, pp. 553–577, September, 1979.

Maciejowski J. M., "Model discrimination using an algorithmic information criterion" (Regular paper), Automatica **15**, 5, pp. 579–593, September, 1979.

Tabak D., A. A. Schy, D. P. Giesy, K. G. Johnson, "Application of multiobjective optimization in aircraft control systems design" (Brief paper), Automatica **15**, 5, pp. 595–600, September, 1979.

Williamson D., "Nonlinear compensation of linear processes" (Brief paper), Automatica **15**, 5, pp. 601–608, September, 1979.

Kaszkurewicz E., L. Hsu, "Stability of nonlinear systems: a structural approach" (Brief paper), Automatica **15**, 5, pp. 609–614, September, 1979.

Kwakernaak H., "An algorithm for rating multiple-aspect

alternatives using fuzzy sets" (Technical Communiqué), Automatica **15**, 5, pp. 615–616, September, 1979.

**Volume 15, Issue 6 — November, 1979**

Happ H. H., C. Pottle, K. A. Wirgau, "Future computer technology for large power system simulation" (Regular paper), Automatica **15**, 6, pp. 621–629, November, 1979.

Pehrson B., "Cautious stochastic computer control applied to concrete mixing" (Regular paper), Automatica **15**, 6, pp. 631–639, November, 1979.

Akashi H., H. Imai, "Insensitive observers for discrete time linear systems" (Regular paper), Automatica **15**, 6, pp. 641–651, November, 1979.

Narendra K. S., L. S. Valavani, "Direct and indirect model reference adaptive control" (Regular paper), Automatica **15**, 6, pp. 653–664, November, 1979.

Buchholt F., M. Kümmel, "Self-tuning control of a pH-neutralization process" (Brief paper), Automatica **15**, 6, pp. 665–671, November, 1979.

Dorato P., H. K. Knudsen, "Periodic optimization with applications to solar energy control" (Brief paper), Automatica **15**, 6, pp. 673–676, November, 1979.

Swamy K. N., T. J. Tarn, "Deterministic and stochastic control of discrete-time bilinear systems" (Brief paper), Automatica **15**, 6, pp. 677–682, November, 1979.

Allen R. W., D. McRuer, "The man/machine control interface-pursuit control" (Brief paper), Automatica **15**, 6, pp. 683–686, November, 1979.

Koda M., "Finite difference implementation of distributed parameter filters" (Brief paper), Automatica **15**, 6, pp. 687–692, November, 1979.

Bayoumi M. M., M. A. El-Bagoury, "Comments on 'Self-tuning adaptive control of cement raw material blending'" (Correspondence item), Automatica **15**, 6, pp. 693–694, November, 1979.

**Volume 16, Issue 1 — January, 1980**

Vukobratović M., D. Stokić, "Contribution to the decoupled control of large-scale mechanical systems" (Regular paper), Automatica **16**, 1, pp. 9–21, January, 1980.

Kokotovic P. V., J. J. Allemong, J. R. Winkelman, J. H. Chow, "Singular perturbation and iterative separation of time scales" (Regular paper), Automatica **16**, 1, pp. 23–33, January, 1980.

Winkelman J. R., J. H. Chow, J. J. Allemong, P. V. Kokotovic, "Multi-time-scale analysis of a power system" (Regular paper), Automatica **16**, 1, pp. 35–43, January, 1980.

Durmaz A., "Dynamic behaviour of material states in steam power plant control" (Regular paper), Automatica **16**, 1, pp. 45–52, January, 1980.

Poljak B. T., Y. Z. Tsypkin, "Robust identification" (Regular paper), Automatica **16**, 1, pp. 53–63, January, 1980.

Schoeffler J. D., "Distributed control system data base updating and error recovery" (Regular paper), Automatica **16**, 1, pp. 65–72, January, 1980.

Mishra B., "Distributed digital processing and closed loop computer control of wastewater treatment" (Brief paper), Automatica **16**, 1, pp. 73–82, January, 1980.

Joalland G., G. Cohen, "Optimal control of a water distribution network by two multilevel methods" (Brief paper), Automatica **16**, 1, pp. 83–88, January, 1980.

Jacobs O. L. R., P. Saratchandran, "Comparison of adaptive controllers" (Brief paper), Automatica **16**, 1, pp. 89–97, January, 1980.

Ardema M., "Nonlinear singularly perturbed optimal control problems with singular arcs" (Brief paper), Automatica **16**, 1, pp. 99–104, January, 1980.

Inagaki M., Y. Funahashi, "Nonisomorphic classes of inhomogeneous bilinear realizations: realizability and existence" (Brief paper), Automatica **16**, 1, pp. 105–108, January, 1980.

"IFAC Workshop on High Level Systems Control in and by Man. April 5–6 1979" (IFAC report), Automatica **16**, 1, p. 109, January, 1980.

Glattfelder A. H., F. Huguenin, W. Schaufelberger, "Microcomputer based self-tuning and self-selecting controllers" (Regular paper), Automatica **16**, 1, pp. 451–8, January, 1980.

**Volume 16, Issue 2 — March, 1980**

Axelby G. S., "Automatica prize paper awards" (Editorial), Automatica **16**, 2, p. 115, March, 1980.

Kurz H., R. Isermann, R. Schumann, "Experimental comparison and application of various parameter-adaptive control algorithms" (Regular paper), Automatica **16**, 2, pp. 117–133, March, 1980.

Hartmann U., V. Krebs, "Command and stability systems for aircraft: a new digital adaptive approach" (Regular paper), Automatica **16**, 2, pp. 135–146, March, 1980.

Bar-Shalom Y., K. D. Wall, "Dual adaptive control and uncertainty effects in macroeconomic systems optimization" (Regular paper), Automatica **16**, 2, pp. 147–156, March, 1980.

Greiss F. K., W. H. Ray, "Stochastic control of processes having moving boundaries - an experimental study" (Regular paper), Automatica **16**, 2, pp. 157–166, March, 1980.

Elliott H., W. A. Wolovich, "A frequency domain model reduction procedure" (Regular paper), Automatica **16**, 2, pp. 167–177, March, 1980.

Han-Fu Chen, "On stochastic observability and controllability" (Regular paper), Automatica **16**, 2, pp. 179–190, March, 1980.

Hájek M., J. Potuček, V. Brodan, "Mathematical model of heart rate regulation during exercise" (Brief paper), Automatica **16**, 2, pp. 191–195, March, 1980.

Ng K. Y. K., N. G. F. Sancho, "Dynamic programming algorithm for optimizing distributed parameter trajectories with constraints" (Brief paper), Automatica **16**, 2, pp. 197–203, March, 1980.

Sezer M. E., Ö Hüseyin, "On decentralized stabilization of interconnected systems" (Brief paper), Automatica **16**, 2, pp. 205–209, March, 1980.

Gardner, Jr. B. F., J. B. Cruz, Jr., "Lower order control for systems with fast and slow modes" (Technical Communiqué), Automatica **16**, 2, pp. 211–213, March, 1980.

Panuska V., "Non-convergence of the approximate maximum likelihood identification algorithm" (Correspondence item), Automatica **16**, 2, pp. 215–217, March, 1980.

Ljung L., "Comments on 'Non-convergence of the approximate maximum likelihood identification algorithm'" (Correspondence item), Automatica **16**, 2, pp. 219–220, March, 1980.

Panuska V., "Author's reply to Comments on 'Non-convergence of the approximate maximum likelihood identification algorithm'" (Correspondence item), Automatica **16**, 2, p. 221, March, 1980.

Lauber R., "First IFAC Workshop SAFECOMP '79. Safety of computer control systems. 16–18 May 1979 in Stuttgart, F.R.G." (IFAC report), Automatica **16**, 2, pp. 223–224, March, 1980.

Mayerová J., "SOCOCO '79 panel discussion on the influence of microprocessors on the process control" (IFAC report), Automatica **16**, 2, p. 225, March, 1980.

Tamm B., "IFAC SOCOCO '79. Software for computer

control. 10–16 June 1979 in Prague, Czechoslovakia" (IFAC report), Automatica **16**, 2, pp. 227–229, March, 1980.

**Volume 16, Issue 3 — May, 1980**

Kahne S., "IFAC publications — four years later" (Editorial), Automatica **16**, 3, p. 235, May, 1980.

McRuer D., "Human dynamics in man-machine systems" (Regular paper), Automatica **16**, 3, pp. 237–253, May, 1980.

Etschmaier M. M., "Fuzzy controls for maintenance scheduling in transportation systems" (Regular paper), Automatica **16**, 3, pp. 255–264, May, 1980.

Kwatny H. G., K. C. Kalnitsky, "Turbine-generator system control for a HTGR power plant" (Regular paper), Automatica **16**, 3, pp. 265–279, May, 1980.

Young P., A. Jakeman, R. McMurtrie, "An instrumental variable method for model order identification" (Regular paper), Automatica **16**, 3, pp. 281–294, May, 1980.

Kumar R., J. B. Moore, "State inverse and decorrelated state stochastic approximation" (Regular paper), Automatica **16**, 3, pp. 295–311, May, 1980.

Åström K. J., "A robust sampled regulator for stable systems with monotone step responses" (Brief paper), Automatica **16**, 3, pp. 313–315, May, 1980.

Johnson, Jr. C. R., E. Tse, "Adaptive input matching control of structurally varying plants" (Brief paper), Automatica **16**, 3, pp. 317–321, May, 1980.

Desrochers A. A., G. N. Saridis, "A model reduction technique for nonlinear systems" (Brief paper), Automatica **16**, 3, pp. 323–329, May, 1980.

Ikeda M., D. D. Šiljak, "On decentrally stabilizable large-scale systems" (Brief paper), Automatica **16**, 3, pp. 331–334, May, 1980.

Seraji H., "Design of pole-placement compensators for multivariable systems" (Brief paper), Automatica **16**, 3, pp. 335–338, May, 1980.

"Report on the IFAC/IFORS Symposium. 'Comparison of automatic control and operational research techniques applied to large systems analysis and control'. ENSAE/CERT, Toulouse, France, March 1979" (IFAC report), Automatica **16**, 3, pp. 339–340, May, 1980.

Mansour M., W. Schaufelberger, "Report on the IFAC Symposium on Computer Aided Design of Control Systems. Zürich, 29–31 August 1979" (IFAC report), Automatica **16**, 3, pp. 341–343, May, 1980.

**Volume 16, Issue 4 — July, 1980**

Axelby G. S., "Survey papers" (Editorial), Automatica **16**, 4, p. 349, July, 1980.

Koivo H. N., "A multivariable self-tuning controller" (Regular paper), Automatica **16**, 4, pp. 351–366, July, 1980.

Kwakernaak H., "Estimation of pulse heights and arrival times" (Regular paper), Automatica **16**, 4, pp. 367–377, July, 1980.

Kavrakoğlu İ, "Models for national energy policy analysis and planning" (Regular paper), Automatica **16**, 4, pp. 379–392, July, 1980.

Penttinen J., H. N. Koivo, "Multivariable tuning regulators for unknown systems" (Brief paper), Automatica **16**, 4, pp. 393–398, July, 1980.

Kung S., T. Kailath, "Fast projection methods for minimal design problems in linear system theory" (Brief paper), Automatica **16**, 4, pp. 399–403, July, 1980.

Bohlin T., L. Rewo, "Experiment design for maximum-power model validation" (Brief paper), Automatica **16**, 4, pp. 405–408, July, 1980.

Başar T., G. J. Olsder, "Team-optimal closed-loop Stackelberg strategies in hierarchical control problems" (Brief paper), Automatica **16**, 4, pp. 409–414, July, 1980.

Tonkin S. W., "A basic attitude instability of spacecraft with imperfect momentum wheels" (Brief paper), Automatica **16**, 4, pp. 415–418, July, 1980.

Johnson, Jr. C. R., "An output error identification interpretation of model reference adaptive control" (Technical Communiqué), Automatica **16**, 4, pp. 419–421, July, 1980.

Gertler J., G. Varga, F. Sipos, "Computational experience with the constrained minimum variance input-output estimator" (Technical Communiqué), Automatica **16**, 4, pp. 423–427, July, 1980.

Nagrani B. T., "A report on technical sessions of the IFAC Symposium on 'Computer application in large scale power systems' held in New Delhi from 16 to 18 August 1979" (IFAC report), Automatica **16**, 4, pp. 429–437, July, 1980.

**Volume 16, Issue 5 — September, 1980**

Axelby G. S., "Special sections and issues" (Editorial), Automatica **16**, 5, p. 441, September, 1980.

Dugard L., I. D. Landau, "Recursive output error identification algorithms theory and evaluation" (Regular paper), Automatica **16**, 5, pp. 443–462, September, 1980.

Morari M., M. J. O'Dowd, "Optimal sensor location in the presence of nonstationary noise" (Regular paper), Automatica **16**, 5, pp. 463–480, September, 1980.

Metzger R., "A simple stability criterion for spinning satellites with flexible appendages" (Brief paper), Automatica **16**, 5, pp. 481–486, September, 1980.

Bos A. van den, "A class of small sample nonlinear least squares problems" (Brief paper), Automatica **16**, 5, pp. 487–490, September, 1980.

Haber R., H. Kurz, R. Schumann, "On the 5th IFAC Symposium on Identification and System Parameter Estimation" (IFAC report), Automatica **16**, 5, pp. 491–493, September, 1980.

Axelby G. S., "Editor's Note" (Editorial), Automatica **16**, 5, p. 501, September, 1980.

Isermann R., "Preface" (Editorial), Automatica **16**, 5, p. 503, September, 1980.

Fasol K. H., H. P. Jörgl, "Principles of model building and identification" (Tutorial paper), Automatica **16**, 5, pp. 505–518, September, 1980.

Rake H., "Step response and frequency response methods" (Tutorial paper), Automatica **16**, 5, pp. 519–526, September, 1980.

Godfrey K. R., "Correlation methods" (Tutorial paper), Automatica **16**, 5, pp. 527–534, September, 1980.

Strejc V., "Least squares parameter estimation" (Tutorial paper), Automatica **16**, 5, pp. 535–550, September, 1980.

Åström K. J., "Maximum likelihood and prediction error methods" (Tutorial paper), Automatica **16**, 5, pp. 551–574, September, 1980.

Isermann R., "Practical aspects of process identification" (Tutorial paper), Automatica **16**, 5, pp. 575–587, September, 1980.

**Volume 16, Issue 6 — November, 1980**

"Obituary Pawel Jan Nowacki 1905–1979" (Editorial), Automatica **16**, 6, pp. 589–591, November, 1980.

Axelby G. S., A. H. Levis, "Technical communiqués and correspondence" (Editorial), Automatica **16**, 6, p. 593, November, 1980.

Nevins J. L., D. E. Whitney, "Assembly research" (Regular paper), Automatica **16**, 6, pp. 595–613, November, 1980.

Candy J. V., R. B. Rozsa, "Safeguards design for a plutonium concentrator — an applied estimation approach" (Regular paper), Automatica **16**, 6, pp. 615–627, November, 1980.

Spencer T. M., "Atmospheric perturbation and control of a

shuttle/tethered satellite" (Regular paper), Automatica **16**, 6, pp. 629–636, November, 1980.
Avramovic B., P. V. Kokotovic, J. R. Winkelman, J. H. Chow, "Area decomposition for electromechanical models of power systems" (Regular paper), Automatica **16**, 6, pp. 637–648, November, 1980.
Aarna O., "Automation of chemical plant modelling" (Regular paper), Automatica **16**, 6, pp. 649–661, November, 1980.
Graupe D., V. K. Jain, J. Salahi, "A comparative analysis of various least-squares identification algorithms" (Regular paper), Automatica **16**, 6, pp. 663–681, November, 1980.
Weiss H., J. B. Moore, "Recursive prediction error algorithms without a stability test" (Brief paper), Automatica **16**, 6, pp. 683–687, November, 1980.
Cox A. B., A. E. Bryson, Jr., "Identification by a combined smoothing nonlinear programming algorithm" (Brief paper), Automatica **16**, 6, pp. 689–694, November, 1980.
Tong R. M., M. B. Beck, A. Latten, "Fuzzy control of the activated sludge wastewater treatment process" (Brief paper), Automatica **16**, 6, pp. 695–701, November, 1980.
Hautus M. L. J., "$(A, B)$ -invariant and stabilizability subspaces, a frequency domain description" (Brief paper), Automatica **16**, 6, pp. 703–707, November, 1980.
Murthy D. N. P., "Observability in discrete time system with faulty sensor" (Technical Communiqué), Automatica **16**, 6, pp. 709–710, November, 1980.
Baliga G. V., M. V. C. Rao, "On symmetric and unity interconnections between three nonlinear subsystems" (Technical Communiqué), Automatica **16**, 6, pp. 711–713, November, 1980.
Ahson S. I., "Comments on: 'Diagonal dominance for multivariable Nyquist array methods using function minimization'" (Correspondence item), Automatica **16**, 6, p. 715, November, 1980.
Leininger G. G., "Author's reply to Dr. Ahson's comments on 'Diagonal dominance for multivariable Nyquist array methods using function minimization'" (Correspondence item), Automatica **16**, 6, p. 717, November, 1980.

## Volume 17, Issue 1 — January, 1981

Isermann R., "Guest editorial" (Editorial), Automatica **17**, 1, pp. 3–4, January, 1981.
Strejc V., "Trends in identification" (Survey paper), Automatica **17**, 1, pp. 7–21, January, 1981.
Young P., "Parameter estimation for continuous-time models — a survey" (Survey paper), Automatica **17**, 1, pp. 23–39, January, 1981.
Peterka V., "Bayesian system identification" (Survey paper), Automatica **17**, 1, pp. 41–53, January, 1981.
Wellstead P. E., "Non-parametric methods of system identification" (Survey paper), Automatica **17**, 1, pp. 55–69, January, 1981.
Ljung L., K. Glover, "Frequency domain versus time domain methods in system identification" (Survey paper), Automatica **17**, 1, pp. 71–86, January, 1981.
Ljung L., "Analysis of a general recursive prediction error identification algorithm" (Regular paper), Automatica **17**, 1, pp. 89–99, January, 1981.
Söderström T., P. Stoica, "Comparison of some instrumental variable methods - consistency and accuracy aspects" (Regular paper), Automatica **17**, 1, pp. 101–115, January, 1981.
Guidorzi R. P., "Invariants and canonical forms for systems structural and parametric identification" (Regular paper), Automatica **17**, 1, pp. 117–133, January, 1981.
Goodwin G. C., P. J. Ramadge, P. E. Caines, "A globally convergent adaptive predictor" (Regular paper), Automatica **17**, 1, pp. 135–140, January, 1981.
Nakamura H., H. Akaike, "Statistical identification for optimal control of supercritical thermal power plants" (Regular paper), Automatica **17**, 1, pp. 143–155, January, 1981.
TyssøA., "Modelling and parameter estimation of a ship boiler" (Regular paper), Automatica **17**, 1, pp. 157–166, January, 1981.
De Keyser R. M. C., A. R. Van Cauwenberghe, "A self-tuning multistep predictor application" (Regular paper), Automatica **17**, 1, pp. 167–174, January, 1981.
Haber R., J. Hetthéssy, L. Keviczky, I. Vajk, A. Fehér' Et Al., "Identification and adaptive control of a glass furnace" (Regular paper), Automatica **17**, 1, pp. 175–185, January, 1981.
Källström C. G., K. J. Åström, "Experiences to system identification applied to ship steering" (Regular paper), Automatica **17**, 1, pp. 187–198, January, 1981.
Roberts P. D., T. W. C. Williams, "On an algorithm for combined system optimisation and parameter estimation" (Regular paper), Automatica **17**, 1, pp. 199–209, January, 1981.
Brovko O., D. M. Wiberg, L. Arena, J. W. Bellville, "The extended Kalman filter as a pulmonary blood flow estimator" (Regular paper), Automatica **17**, 1, pp. 213–220, January, 1981.
Castrucci P. B. L., J. D. G. Garcia, "Linear modelling and optimal control applied to an indexing process" (Regular paper), Automatica **17**, 1, pp. 221–229, January, 1981.
Clarke D. W., P. J. Gawthrop, "Implementation and application of microprocessor-based self-tuners" (Regular paper), Automatica **17**, 1, pp. 233–244, January, 1981.
Kurz H., W. Goedecke, "Digital parameter-adaptive control of processes with unknown dead time" (Regular paper), Automatica **17**, 1, pp. 245–252, January, 1981.

## Volume 17, Issue 2 — March, 1981

Axelby G. S., M. Kümmel, "On book reviews" (Editorial), Automatica **17**, 2, pp. 261–262, March, 1981.
Maffezzoni C., V. Marchese, "Structural parameter estimation in power systems" (Regular paper), Automatica **17**, 2, pp. 263–279, March, 1981.
Delebecque F., J.-P. Quadrat, "Optimal control of Markov chains admitting strong and weak interactions" (Regular paper), Automatica **17**, 2, pp. 281–296, March, 1981.
Benlahcen D., M. Lamotte, "A fuzzy automaton synthesis method" (Regular paper), Automatica **17**, 2, pp. 297–306, March, 1981.
Pun L., "Computer assisted static and dynamical plannings for production activities" (Regular paper), Automatica **17**, 2, pp. 307–320, March, 1981.
Grötzbach M., "Analysis of periodically switch controlled lowpass systems by continuous approximation models" (Regular paper), Automatica **17**, 2, pp. 321–334, March, 1981.
Grujić L. T., "On absolute stability and the Aizerman conjecture" (Regular paper), Automatica **17**, 2, pp. 335–349, March, 1981.
Werner J., "Control aspects of human temperature regulation" (Regular paper), Automatica **17**, 2, pp. 351–362, March, 1981.
O'Reilly J., "The discrete linear time invariant time-optimal control problem — an overview" (Brief paper), Automatica **17**, 2, pp. 363–370, March, 1981.
Schizas C., F. J. Evans, "A graph theoretic approach to multivariable control system design" (Brief paper), Automatica **17**, 2, pp. 371–377, March, 1981.
Nakamori S., A. Hataji, "New prediction algorithms by covariance information based on innovation theory" (Brief

paper), Automatica **17**, 2, pp. 379–386, March, 1981.
Söderström T., "On a method for model structure selection in system identification" (Technical Communiqué), Automatica **17**, 2, pp. 387–388, March, 1981.
Otter P. W., "Identification and estimation of discrete state-vector models with stochastic inputs" (Technical Communiqué), Automatica **17**, 2, pp. 389–391, March, 1981.
Runggaldier W. J., "A generalized certainty-equivalence result in stochastic control" (Technical Communiqué), Automatica **17**, 2, pp. 393–395, March, 1981.
Commault C., "Optimal choice of modes for aggregation" (Technical Communiqué), Automatica **17**, 2, pp. 397–399, March, 1981.
Gertler J., F. Sipos, "Performance index sensitivity of the constrained minimum variance input-output estimator" (Technical Communiqué), Automatica **17**, 2, pp. 401–405, March, 1981.
Desrochers A. A., "On an improved model reduction technique for nonlinear systems" (Technical Communiqué), Automatica **17**, 2, pp. 407–409, March, 1981.
Emara-Shabaik H. E., C. T. Leondes, "A note on the extended Kalman filter" (Technical Communiqué), Automatica **17**, 2, pp. 411–412, March, 1981.
Bos A. van den, "A class of small sample nonlinear least squares problems (Erratum)" (Other), Automatica **17**, 2, p. 413, March, 1981.

## Volume 17, Issue 3 — May, 1981

Axelby G. S., "New positions and directions" (Editorial), Automatica **17**, 3, p. 419, May, 1981.
Oshima Y., "Recent trends of manufacturing technology in Japan" (Regular paper), Automatica **17**, 3, pp. 421–440, May, 1981.
Dohner A. R., "Optimal control solution of the automotive emission-constrained minimum fuel problem" (Regular paper), Automatica **17**, 3, pp. 441–458, May, 1981.
Young P., "A second generation adaptive autostabilization system for airborne vehicles" (Regular paper), Automatica **17**, 3, pp. 459–470, May, 1981.
Yorke G. L., D. B. Cherchas, "An algorithm for non-linear space-time nuclear reactor control" (Regular paper), Automatica **17**, 3, pp. 471–482, May, 1981.
Dexter A. L., "Self-tuning optimum start control of heating plant" (Regular paper), Automatica **17**, 3, pp. 483–492, May, 1981.
Yoshimura T., Y. Okamoto, T. Soeda, "Prediction of air pollutant concentrations in Tokushima Prefecture, Japan" (Regular paper), Automatica **17**, 3, pp. 493–508, May, 1981.
Aplevich J. D., "Time-domain input-output representations of linear systems" (Regular paper), Automatica **17**, 3, pp. 509–522, May, 1981.
Staar J., "A study of MBH-type realization algorithms" (Regular paper), Automatica **17**, 3, pp. 523–533, May, 1981.
Orbach A., C. Rorres, R. Fischl, "Optimal control of a solar collector loop using a distributed-lumped model" (Brief paper), Automatica **17**, 3, pp. 535–539, May, 1981.
El-Sherief H., "Multivariable system structure and parameter identification using the correlation method" (Brief paper), Automatica **17**, 3, pp. 541–544, May, 1981.
Solo V., "The convergence of an instrumental-variable-like recursion" (Technical Communiqué), Automatica **17**, 3, pp. 545–547, May, 1981.

## Volume 17, Issue 4 — July, 1981

U.S.S.R. National Committee on Automatic Control The, "Obituary Boris Nikolaevich Petrov 1913–1980" (Editorial), Automatica **17**, 4, pp. 553–554, July, 1981.
Lorell K. R., E. K. Parsons, J. D. Powell, "Image motion compensation system for the shuttle infrared telescope facility" (Regular paper), Automatica **17**, 4, pp. 555–562, July, 1981.
Dodds S. J., "Adaptive, high precision, satellite attitude control for microprocessor implementation" (Regular paper), Automatica **17**, 4, pp. 563–573, July, 1981.
Bayoumi M. M., K. Y. Wong, M. A. El-Bagoury, "A self-tuning regulator for multivariable systems" (Regular paper), Automatica **17**, 4, pp. 575–592, July, 1981.
Landau I. D., R. Lozano, "Unification of discrete time explicit model reference adaptive control designs" (Regular paper), Automatica **17**, 4, pp. 593–611, July, 1981.
Shiraiwa T., Y. Sakamoto, S. Kobayashi, S. Anezaki, H. Kato' A. Kuwabara, "Automatic control of casting speed in ingot casting" (Brief paper), Automatica **17**, 4, pp. 613–618, July, 1981.
Wasynczuk O., R. A. DeCarlo, "The component connection model and structure preserving model order reduction" (Brief paper), Automatica **17**, 4, pp. 619–626, July, 1981.
Pachter M., "Speed control of a field controlled d.c. traction motor" (Brief paper), Automatica **17**, 4, pp. 627–630, July, 1981.
Balestrino A., G. Celentano, "Dynamic controllers in linear multivariable systems" (Brief paper), Automatica **17**, 4, pp. 631–636, July, 1981.
Kim C. G., V. Gourishankar, "A model reference adaptive technique of identification for discrete systems" (Technical Communiqué), Automatica **17**, 4, pp. 637–640, July, 1981.
Sezer M. E., D. D. Šiljak, "On decentralized stabilization and structure of linear large scale systems" (Technical Communiqué), Automatica **17**, 4, pp. 641–644, July, 1981.
Campbell S. L., "On an assumption guaranteeing boundary layer convergence of singularly perturbed systems" (Technical Communiqué), Automatica **17**, 4, pp. 645–646, July, 1981.
Gilli M., E. Rossier, "Understanding complex systems" (Technical Communiqué), Automatica **17**, 4, pp. 647–652, July, 1981.
Janakiraman P. A., S. Renganathan, "A new on-line identification method for discrete multivariable linear systems" (Technical Communiqué), Automatica **17**, 4, pp. 653–655, July, 1981.
Yoshimura T., K. Konishi, T. Soeda, "A modified extended Kalman filter for linear discrete-time systems with unknown parameters" (Technical Communiqué), Automatica **17**, 4, pp. 657–660, July, 1981.
Nakamori S., A. Hataji, "New design of linear least-squares fixed-interval smoother using covariance information" (Technical Communiqué), Automatica **17**, 4, pp. 661–664, July, 1981.
Katti S. K., "Comments on 'Decentralized control of linear multivariable systems'" (Correspondence item), Automatica **17**, 4, p. 665, July, 1981.

## Volume 17, Issue 5 — September, 1981

U.S.S.R. National Committee on Automatic Control The, "Obituary Naum Samoylovich Rajbman 4 February 1921 — 8 January 1981" (Editorial), Automatica **17**, 5, p. 671, September, 1981.
Zaborszky J., K. W. Whang, K. V. Prasad, I. N. Katz, "Local feedback stabilization of large interconnected power systems in emergencies" (Regular paper), Automatica **17**, 5, pp. 673–686, September, 1981.
Di Caprio U., "Conditions for theoretical coherency in multimachine power systems" (Regular paper), Automatica **17**, 5, pp. 687–701, September, 1981.
Anderson B. D. O., D. J. Clements, "Algebraic characterization

of fixed modes in decentralized control" (Regular paper), Automatica **17**, 5, pp. 703–712, September, 1981.
Söderström T., "Identification of stochastic linear systems in presence of input noise" (Regular paper), Automatica **17**, 5, pp. 713–725, September, 1981.
Sandoz D. J., O. Wong, "Computer aided control system design applied to milk drying plants" (Brief paper), Automatica **17**, 5, pp. 727–735, September, 1981.
Buchholt F., M. Kümmel, "A multivariable selftuning regulator to control a double effect evaporator" (Brief paper), Automatica **17**, 5, pp. 737–743, September, 1981.
Kučera V., "New results in state estimation and regulation" (Brief paper), Automatica **17**, 5, pp. 745–748, September, 1981.
Başar T., "Equilibrium strategies in dynamic games with multi-levels of hierarchy" (Brief paper), Automatica **17**, 5, pp. 749–754, September, 1981.
Furuta K., S. Hatakeyama, H. Kominami, "Structural identification and software package for linear multivariable systems" (Brief paper), Automatica **17**, 5, pp. 755–762, September, 1981.
Yoshikawa T., T. Sugie, "Inverse systems for reproducing linear functions of inputs" (Brief paper), Automatica **17**, 5, pp. 763–769, September, 1981.
Brewer J. W., E. Aghabarari, "On the design of feedback control for relative stability" (Technical Communiqué), Automatica **17**, 5, pp. 771–772, September, 1981.

## Volume 17, Issue 6 — November, 1981

Kershenbaum L. S., T. R. Fortescue, "Implementation of on-line control in chemical process plants" (Regular paper), Automatica **17**, 6, pp. 777–788, November, 1981.
Kokotovic P. V., "Subsystems, time scales and multimodeling" (Regular paper), Automatica **17**, 6, pp. 789–795, November, 1981.
Khalil H. K., "Asymptotic stability of nonlinear multiparameter singularly perturbed systems" (Regular paper), Automatica **17**, 6, pp. 797–804, November, 1981.
Kumar R., J. B. Moore, "Detection techniques in least squares identification" (Regular paper), Automatica **17**, 6, pp. 805–819, November, 1981.
Salman M. A., J. B. Cruz, Jr., "An incentive model of duopoly with government coordination" (Regular paper), Automatica **17**, 6, pp. 821–829, November, 1981.
Fortescue T. R., L. S. Kershenbaum, B. E. Ydstie, "Implementation of self-tuning regulators with variable forgetting factors" (Brief paper), Automatica **17**, 6, pp. 831–835, November, 1981.
Cremer M., M. Papageorgiou, "Parameter identification for a traffic flow model" (Brief paper), Automatica **17**, 6, pp. 837–843, November, 1981.
Chemouil P., M. R. Katebi, D. Sastry, M. G. Singh, "Maximum a posteriori parameter estimation in large-scale systems" (Brief paper), Automatica **17**, 6, pp. 845–851, November, 1981.
Jocić Lj. B., "On the attractivity of imbedded systems" (Brief paper), Automatica **17**, 6, pp. 853–860, November, 1981.
Stoica P., T. Söderström, "Analysis of an output error identification algorithm" (Technical Communiqué), Automatica **17**, 6, pp. 861–863, November, 1981.

## Volume 18, Issue 1 — January, 1982

Anderson B. D. O., C. R. Johnson, Jr., "Exponential convergence of adaptive identification and control algorithms" (Regular paper), Automatica **18**, 1, pp. 1–13, January, 1982.
Billings S. A., S. Y. Fakhouri, "Identification of systems containing linear dynamic and static nonlinear elements" (Regular paper), Automatica **18**, 1, pp. 15–26, January, 1982.
Bohn E. V., "Estimation of continuous-time linear system parameters from periodic data" (Regular paper), Automatica **18**, 1, pp. 27–36, January, 1982.
Shimizu K., E. Aiyoshi, "A new solution to optimization-satisfaction problems by a penalty method" (Regular paper), Automatica **18**, 1, pp. 37–46, January, 1982.
Kokotovic P. V., B. Avramovic, J. H. Chow, J. R. Winkelman, "Coherency based decomposition and aggregation" (Regular paper), Automatica **18**, 1, pp. 47–56, January, 1982.
Francis B. A., "Convergence in the boundary layer for singularly perturbed equations" (Regular paper), Automatica **18**, 1, pp. 57–62, January, 1982.
Maat H. J. ter, "The renovation and automation of a tandem cold rolling mill" (Brief paper), Automatica **18**, 1, pp. 63–69, January, 1982.
Goldsack S. J., J. Kramer, "Invariants in the application-oriented specification of control systems" (Brief paper), Automatica **18**, 1, pp. 71–76, January, 1982.
Landau I. L., "Combining model reference adaptive controllers and stochastic self-tuning regulators" (Brief paper), Automatica **18**, 1, pp. 77–84, January, 1982.
Parker G. A., E. L. Moore, "Practical nonlinear system identification using a modified Volterra series approach" (Brief paper), Automatica **18**, 1, pp. 85–91, January, 1982.
Söderström T., P. Stoica, "Some properties of the output error method" (Brief paper), Automatica **18**, 1, pp. 93–99, January, 1982.
El-Sherief H., N. K. Sinha, "Suboptimal control of linear stochastic multivariable systems with unknown parameters" (Brief paper), Automatica **18**, 1, pp. 101–105, January, 1982.
Palmor Z. J., "Properties of optimal stochastic control systems with dead-time" (Brief paper), Automatica **18**, 1, pp. 107–116, January, 1982.
Hrovat D., "A class of active LQG optimal actuators" (Technical Communiqué), Automatica **18**, 1, pp. 117–119, January, 1982.

## Volume 18, Issue 2 — March, 1982

Kimura H., "Perfect and subperfect regulation in linear multivariable control systems" (Regular paper), Automatica **18**, 2, pp. 125–145, March, 1982.
Mayne D. Q., E. Polak, A. Sangiovanni-Vincentelli, "Computer-aided design via optimization: a review" (Regular paper), Automatica **18**, 2, pp. 147–154, March, 1982.
Sakawa M., F. Seo, "Interactive multiobjective decision making in environmental systems using sequential proxy optimization techniques (SPOT)" (Regular paper), Automatica **18**, 2, pp. 155–165, March, 1982.
Ho Yu-Chi, P. B. Luh, G. J. Olsder, "A control-theoretic view on incentives" (Regular paper), Automatica **18**, 2, pp. 167–179, March, 1982.
Holmberg A., J. Ranta, "Procedures for parameter and state estimation of microbial growth process models" (Regular paper), Automatica **18**, 2, pp. 181–193, March, 1982.
Anderson B. D. O., M. R. Gevers, "Identifiability of linear stochastic systems operating under linear feedback" (Regular paper), Automatica **18**, 2, pp. 195–213, March, 1982.
Bittanti S., "Local identifiability of time-invariant linear systems by periodic test signals" (Regular paper), Automatica **18**, 2, pp. 215–228, March, 1982.
Fogel E., Y. F. Huang, "On the value of information in system identification — bounded noise case" (Regular paper),

Automatica **18**, 2, pp. 229–238, March, 1982.
Vlieger J. H. de, H. B. Verbruggen, P. M. Bruijn, "A time-optimal control algorithm for digital computer control" (Brief paper), Automatica **18**, 2, pp. 239–244, March, 1982.
Valkó P., G. A. Almásy, "Periodic optimization of Hammerstein-type systems" (Brief paper), Automatica **18**, 2, pp. 245–248, March, 1982.
Bell D. J., "Modelling of dynamical systems. Vols 1 and 2, H. Nicholson (editor)" (Book review), Automatica **18**, 2, pp. 249–250, March, 1982.
Johnson, Jr. C. R., "Modern control systems, 3rd edn, by R. C. Dorf" (Book review), Automatica **18**, 2, pp. 251–252, March, 1982.

## Volume 18, Issue 3 — May, 1982

Sakawa Y., Y. Shindo, "Optimal control of container cranes" (Regular paper), Automatica **18**, 3, pp. 257–266, May, 1982.
Polak E., Y. Wardi, "Nondifferentiable optimization algorithm for designing control systems having singular value inequalities" (Regular paper), Automatica **18**, 3, pp. 267–283, May, 1982.
Godfrey K. R., R. P. Jones, R. F. Brown, J. P. Norton, "Factors affecting the identifiability of compartmental models" (Regular paper), Automatica **18**, 3, pp. 285–293, May, 1982.
Saksena V. R., J. B. Cruz, Jr., "A multimodel approach to stochastic Nash games" (Regular paper), Automatica **18**, 3, pp. 295–305, May, 1982.
Dumont G. A., "Self-tuning control of a chip refiner motor load" (Brief paper), Automatica **18**, 3, pp. 307–314, May, 1982.
Sin Kwai Sang, G. C. Goodwin, "Stochastic adaptive control using a modified least squares algorithm" (Brief paper), Automatica **18**, 3, pp. 315–321, May, 1982.
Mahmoud M. S., "Design of observer-based controllers for a class of discrete systems" (Brief paper), Automatica **18**, 3, pp. 323–328, May, 1982.
Abu-El-Magd M. A., N. K. Sinha, "Modelling and forecasting short-term load demand: a multivariate approach" (Brief paper), Automatica **18**, 3, pp. 329–333, May, 1982.
Kokawa M., S. Shingai, "Failure propagating simulation and nonfailure paths search in network systems" (Brief paper), Automatica **18**, 3, pp. 335–341, May, 1982.
Stengel R. F., "Equilibrium response of flight control systems" (Brief paper), Automatica **18**, 3, pp. 343–348, May, 1982.
Chen C. C., L. Shaw, "On receding horizon feedback control" (Brief paper), Automatica **18**, 3, pp. 349–352, May, 1982.
Sripad A. B., "Performance degradation in digitally implemented optimal regulators using fixed-point arithmetic" (Brief paper), Automatica **18**, 3, pp. 353–357, May, 1982.
Lan Jin, W. E. Miller, "Third IFAC Workshop: Distributed Computer Control Systems" (IFAC report), Automatica **18**, 3, pp. 359–361, May, 1982.
Clarke D. W., "Identification of industrial processes, by N. S. Rajbman and V. M. Chadeev" (Book review), Automatica **18**, 3, pp. 363–364, May, 1982.
Glasser D., "Numerical optimisation of dynamic systems, by L. C. W. Dixon and G. P. Szegö" (Book review), Automatica **18**, 3, pp. 365–366, May, 1982.
Kokotovic P. V., "Subsystems, time scales and multimodeling (Erratum)" (Other), Automatica **18**, 3, p. 371, May, 1982.
Francis B. A., "Convergence in the boundary layer for singularly perturbed equations (Erratum)" (Other), Automatica **18**, 3, p. 371, May, 1982.

## Volume 18, Issue 4 — July, 1982

Godet J., R. Gorez, "Optimal control of primary coolant temperature in a nuclear plant" (Regular paper), Automatica **18**, 4, pp. 373–383, July, 1982.
Young K.-K. D., H. G. Kwatny, "Variable structure servomechanism design and applications to overspeed protection control" (Regular paper), Automatica **18**, 4, pp. 385–400, July, 1982.
Rouhani R., R. K. Mehra, "Model algorithmic control (MAC); basic theoretical properties" (Regular paper), Automatica **18**, 4, pp. 401–414, July, 1982.
Emami-Naeini A., P. Van Dooren, "Computation of zeros of linear multivariable systems" (Regular paper), Automatica **18**, 4, pp. 415–430, July, 1982.
Tołwiński B., "A concept of cooperative equilibrium for dynamic games" (Regular paper), Automatica **18**, 4, pp. 431–441, July, 1982.
Koning W. L. de, "Infinite horizon optimal control of linear discrete time systems with stochastic parameters" (Regular paper), Automatica **18**, 4, pp. 443–453, July, 1982.
Lozano-Leal R., "Independent tracking and regulation adaptive control with forgetting factor" (Brief paper), Automatica **18**, 4, pp. 455–459, July, 1982.
Mayne D. Q., F. Firoozan, "Linear identification of ARMA processes" (Brief paper), Automatica **18**, 4, pp. 461–466, July, 1982.
Looze D. P., N. R. Sandell, Jr., "Hierarchical control of weakly-coupled systems" (Brief paper), Automatica **18**, 4, pp. 467–471, July, 1982.
Xinogalas T. C., M. S. Mahmoud, M. G. Singh, "Hierarchical computation of decentralized gains for interconnected systems" (Brief paper), Automatica **18**, 4, pp. 473–478, July, 1982.
Nakamori S., A. Hataji, "Relation between filter using covariance information and Kalman filter" (Brief paper), Automatica **18**, 4, pp. 479–483, July, 1982.
Thowsen A., "Sampled-data stabilization of linear time-delay systems" (Technical Communiqué), Automatica **18**, 4, pp. 485–486, July, 1982.
Stoica P., J. Holst, T. Söderström, "Eigenvalue location of certain matrices arising in convergence analysis problems" (Technical Communiqué), Automatica **18**, 4, pp. 487–489, July, 1982.
Palmor Z. J., "On the practical stability of optimal stochastic control systems with dead-time" (Technical Communiqué), Automatica **18**, 4, pp. 491–492, July, 1982.
Parlar M., "Efficiency of rolling schedules for a class of stochastic control problems" (Technical Communiqué), Automatica **18**, 4, pp. 493–495, July, 1982.
Willems J. C., "Linear systems, by T. Kailath" (Book review), Automatica **18**, 4, pp. 497–499, July, 1982.
Olsder G. J., "Dynamical hierarchical control, by M. G. Singh" (Book review), Automatica **18**, 4, pp. 501–503, July, 1982.
Rijnsdorp J. E., "Advanced process control, by W. H. Ray" (Book review), Automatica **18**, 4, p. 505, July, 1982.

## Volume 18, Issue 5 — September, 1982

Axelby G. S., "Updated key word selection list" (Editorial), Automatica **18**, 5, p. 511, September, 1982.
Isermann R., "Parameter adaptive control algorithms — a tutorial" (Tutorial paper), Automatica **18**, 5, pp. 513–528, September, 1982.
Overbeek A. J. M. van, L. Ljung, "On-line structure selection for multivariable state-space models" (Regular paper), Automatica **18**, 5, pp. 529–543, September, 1982.
Geromel J. C., J. Bernussou, "Optimal decentralized control of dynamic systems" (Regular paper), Automatica **18**, 5, pp. 545–557, September, 1982.
Cliff E. M., H. J. Kelley, L. Lefton, "Thrust-vectored energy turns" (Regular paper), Automatica **18**, 5, pp. 559–564,

September, 1982.
Kelley H. J., E. M. Cliff, L. Lefton, "Thrust-vectored differential turns" (Brief paper), Automatica **18**, 5, pp. 565–568, September, 1982.
Schumann R., "Digital parameter-adaptive control of an air-conditioning plant" (Brief paper), Automatica **18**, 5, pp. 569–575, September, 1982.
Young K.-K. D., P. V. Kokotovic, "Analysis of feedback-loop interactions with actuator and sensor parasitics" (Brief paper), Automatica **18**, 5, pp. 577–582, September, 1982.
Owens D. H., A. Chotai, "High performance controllers for unknown multivariable systems" (Brief paper), Automatica **18**, 5, pp. 583–587, September, 1982.
Eichstaedt B., "Multivariable closed-loop deadbeat control: a polynomial-matrix approach" (Brief paper), Automatica **18**, 5, pp. 589–593, September, 1982.
Hubbard M., T. DaSilva, "Estimation of feedstream concentrations in cement raw material blending" (Brief paper), Automatica **18**, 5, pp. 595–606, September, 1982.
Tugnait J. K., "Detection and estimation for abruptly changing systems" (Brief paper), Automatica **18**, 5, pp. 607–615, September, 1982.
Stoica P., T. Söderström, "Uniqueness of prediction error estimates of multivariable moving average models" (Brief paper), Automatica **18**, 5, pp. 617–620, September, 1982.
Hassan M. F., M. S. Mahmoud, M. G. Singh, M. P. Spathopolous, "A two-level parameter estimation algorithm using the multiple projection approach" (Brief paper), Automatica **18**, 5, pp. 621–630, September, 1982.
Janakiraman P. A., S. Renganathan, "Recursive computation of pseudo-inverse of matrices" (Technical Communiqué), Automatica **18**, 5, pp. 631–633, September, 1982.
Jacobs O. L. R., "Trends and progress in system identification, P. Eykhoff (editor)" (Book review), Automatica **18**, 5, pp. 635–636, September, 1982.
"Automatica key word list (1982 edition)" (Editorial), Automatica **18**, 5, pp. 637–639, September, 1982.
Palmor Z. J., "Properties of optimal stochastic control systems with dead-time (Erratum)" (Other), Automatica **18**, 5, p. 645, September, 1982.
Bittanti S., "Local identifiability of time-invariant linear systems by periodic test signals (Erratum)" (Other), Automatica **18**, 5, p. 645, September, 1982.

## Volume 18, Issue 6 — November, 1982

Findeisen W., "Decentralized and hierarchical control under consistency or disagreement of interests" (Survey paper), Automatica **18**, 6, pp. 647–664, November, 1982.
Boehm H., "Adaptive control to a dry etch process by microcomputer" (Regular paper), Automatica **18**, 6, pp. 665–673, November, 1982.
Cho C. H., N. Norden, "Computer optimization of refrigeration systems in a textile plant: a case history" (Regular paper), Automatica **18**, 6, pp. 675–683, November, 1982.
Pugachev V. S., "Conditionally optimal estimation in stochastic differential systems" (Regular paper), Automatica **18**, 6, pp. 685–696, November, 1982.
Chankong V., Y. Y. Haimes, "On the characterization of noninferior solutions of the vector optimization problem" (Regular paper), Automatica **18**, 6, pp. 697–707, November, 1982.
Postlethwaite I., "Sensitivity of the characteristic gain loci" (Brief paper), Automatica **18**, 6, pp. 709–712, November, 1982.
Saksena V. R., T. Başar, "A multimodel approach to stochastic team problems" (Brief paper), Automatica **18**, 6, pp. 713–720, November, 1982.
Mahalanabis A. K., S. Prasad, K. P. Mohandas, "Recursive decision directed estimation of reflection coefficients for seismic data deconvolution" (Brief paper), Automatica **18**, 6, pp. 721–726, November, 1982.
Ko Kay Yuh-Ju, B. C. McInnis, G. C. Goodwin, "Adaptive control and identification of the dissolved oxygen process" (Technical Communiqué), Automatica **18**, 6, pp. 727–730, November, 1982.
Humble S., "Failure diagnosis and performance monitoring, by L. F. Pau" (Book review), Automatica **18**, 6, p. 731, November, 1982.
Waller K. V., "Distillation columns, by A. E. Nisenfeld and R. C. Seemann" (Book review), Automatica **18**, 6, pp. 733–734, November, 1982.

## Volume 19, Issue 1 — January, 1983

Wahlström B., A. Juusela, M. Ollus, P. Närväinen, I. Lehmus' P. Lönnqvist, "A distributed control system and its application to a board mill" (Regular paper), Automatica **19**, 1, pp. 1–14, January, 1983.
Tarvainen K., Y. Y. Haimes, I. Lefkowitz, "Decomposition methods in multiobjective discrete-time dynamic problems" (Regular paper), Automatica **19**, 1, pp. 15–28, January, 1983.
Tsay Y. T., L. S. Shieh, "Block decomposition and block modal controls of multivariable control systems" (Regular paper), Automatica **19**, 1, pp. 29–40, January, 1983.
Sannuti P., "Direct singular perturbation analysis of high-gain and cheap control problems" (Regular paper), Automatica **19**, 1, pp. 41–51, January, 1983.
Yakowitz S. J., "Convergence rate analysis of the state increment dynamic programming method" (Regular paper), Automatica **19**, 1, pp. 53–60, January, 1983.
Tugnait J. K., "On identification and adaptive estimation for systems with interrupted observations" (Regular paper), Automatica **19**, 1, pp. 61–73, January, 1983.
Ioannou P., C. R. Johnson, Jr., "Reduced-order performance of parallel and series-parallel identifiers with weakly observable parasitics" (Brief paper), Automatica **19**, 1, pp. 75–80, January, 1983.
Samson C., "Stability analysis of adaptively controlled systems subject to bounded disturbances" (Brief paper), Automatica **19**, 1, pp. 81–86, January, 1983.
Francis B. A., M. Vidyasagar, "Algebraic and topological aspects of the regulator problem for lumped linear systems" (Brief paper), Automatica **19**, 1, pp. 87–90, January, 1983.
Belanger P. R., "On type 1 systems and the Clarke-Gawthrop regulator" (Brief paper), Automatica **19**, 1, pp. 91–94, January, 1983.
Lozano-Leal R., "Convergence analysis of recursive identification algorithms with forgetting factor" (Brief paper), Automatica **19**, 1, pp. 95–97, January, 1983.
Fossard A. J., "Outils et modèles mathématiques pour l'automatique. L'analyse de systèmes et le traitement du signal, I. D. Landau (editor)" (Book review), Automatica **19**, 1, pp. 99–100, January, 1983.
Curtain R. F., "Functional analysis and linear control theory, by J. R. Leigh" (Book review), Automatica **19**, 1, pp. 101–102, January, 1983.
Isermann R., "State space theory of discrete linear control, by V. Strejc" (Book review), Automatica **19**, 1, p. 103, January, 1983.
Strietzel R., "An elementary introduction to optimal control, by J. M. Blatt" (Book review), Automatica **19**, 1, pp. 105–106, January, 1983.

## Volume 19, Issue 2 — March, 1983

Kaya A., M. A. Keyes, IV, "Energy management technology in

pulp, paper, and allied industries" (Survey paper), Automatica **19**, 2, pp. 111–130, March, 1983.
Mann W., "Digital control of a rotary dryer in the sugar industry" (Regular paper), Automatica **19**, 2, pp. 131–148, March, 1983.
Ho Y. C., C. Cassandras, "A new approach to the analysis of discrete event dynamic systems" (Regular paper), Automatica **19**, 2, pp. 149–167, March, 1983.
Davison E. J., Ü. Özgüner, "Characterizations of decentralized fixed modes for interconnected systems" (Regular paper), Automatica **19**, 2, pp. 169–182, March, 1983.
Benallou A., D. A. Mellichamp, D. E. Seborg, "Characterization of equilibrium sets for bilinear systems with feedback control" (Regular paper), Automatica **19**, 2, pp. 183–189, March, 1983.
Kashani H. R., G. N. Saridis, "Intelligent control for urban traffic systems" (Brief paper), Automatica **19**, 2, pp. 191–197, March, 1983.
Weston A. R., E. M. Cliff, H. J. Kelley, "Altitude transitions in energy climbs" (Brief paper), Automatica **19**, 2, pp. 199–202, March, 1983.
Shinar J., "On applications of singular perturbation techniques in nonlinear optimal control" (Brief paper), Automatica **19**, 2, pp. 203–211, March, 1983.
Kahne S., "Automatic control systems, by B. C. Kuo" (Book review), Automatica **19**, 2, p. 213, March, 1983.
Derese I. A., "Multivariable system theory and design, by R. V. Patel and N. Munro" (Book review), Automatica **19**, 2, pp. 215–216, March, 1983.
Halme A., "Digital control using microprocessors, by P. Katz" (Book review), Automatica **19**, 2, pp. 217–218, March, 1983.

## Volume 19, Issue 3 — May, 1983

Bonivento C., G. Marro, "Obituary Giuseppe Evangelisti 1903–1981" (Editorial), Automatica **19**, 3, pp. 223–224, May, 1983.
Kiparissides C., S. L. Shah, "Self-tuning and stable adaptive control of a batch polymerization reactor" (Regular paper), Automatica **19**, 3, pp. 225–235, May, 1983.
Chan Y. M., J. B. Cruz, Jr., "Self-tuning leader-follower games" (Regular paper), Automatica **19**, 3, pp. 237–245, May, 1983.
Fossard A. J., M. Berthelot, J. F. Magni, "On coherency-based decomposition algorithms" (Regular paper), Automatica **19**, 3, pp. 247–253, May, 1983.
Palmor Z. J., Y. Halevi, "On the design and properties of multivariable dead time compensators" (Regular paper), Automatica **19**, 3, pp. 255–264, May, 1983.
Inouye Y., "Approximation of multivariable linear systems with impulse response and autocorrelation sequences" (Regular paper), Automatica **19**, 3, pp. 265–277, May, 1983.
Tsai Chee, L. Kurz, "An adaptive robustizing approach to Kalman filtering" (Regular paper), Automatica **19**, 3, pp. 279–288, May, 1983.
Vastola K. S., H. V. Poor, "An analysis of the effects of spectral uncertainty on Wiener filtering" (Brief paper), Automatica **19**, 3, pp. 289–293, May, 1983.
Zarrop M. B., "Variable forgetting factors in parameter estimation" (Brief paper), Automatica **19**, 3, pp. 295–298, May, 1983.
Looze D. P., "A dual optimization procedure for linear quadratic robust control problems" (Brief paper), Automatica **19**, 3, pp. 299–302, May, 1983.
Longchamp R., "Singular perturbation analysis of a receding horizon controller" (Brief paper), Automatica **19**, 3, pp. 303–308, May, 1983.
Ikeda M., D. D. Šiljak, K. Yasuda, "Optimality of decentralized control for large-scale systems" (Brief paper), Automatica **19**, 3, pp. 309–316, May, 1983.
Filip F. G., D. A. Donciulescu, "On an on-line dynamic coordination method in process industry" (Brief paper), Automatica **19**, 3, pp. 317–320, May, 1983.
Levine W. S., M. Christodoulou, F. E. Zajac, "On propelling a rod to a maximum vertical or horizontal distance" (Brief paper), Automatica **19**, 3, pp. 321–324, May, 1983.
Axelby G. S., "IFAC — 25th anniversary day. Impact of automatic control: present and future" (IFAC report), Automatica **19**, 3, p. 325, May, 1983.
Vámos T., "Introduction and overview" (IFAC report), Automatica **19**, 3, p. 327, May, 1983.
Coales J., "The birth of IFAC and its publications" (IFAC report), Automatica **19**, 3, pp. 329–335, May, 1983.
Chestnut H., "25 years of IFAC — from Heidelberg to Heidelberg" (IFAC report), Automatica **19**, 3, pp. 337–340, May, 1983.
Nakamori S., "New design of linear discrete-time predictor using covariance information" (Technical Communiqué), Automatica **19**, 3, pp. 341–344, May, 1983.
Sanoff S. P., P. E. Wellstead, "Comments on 'Implementation of self-tuning regulators with variable forgetting factors'" (Correspondence item), Automatica **19**, 3, pp. 345–346, May, 1983.
Kershenbaum L. S., B. E. Ydstie, "Comments on 'Implementation of self-tuning regulators with variable forgetting factors'. Author's reply" (Correspondence item), Automatica **19**, 3, p. 346, May, 1983.
Sage A. P., "System dynamics and the analysis of change, B. E. Paulré (editor)" (Book review), Automatica **19**, 3, p. 347, May, 1983.
Solheim O. A., "Multivariable and optimal systems, by D. H. Owens" (Book review), Automatica **19**, 3, pp. 349–350, May, 1983.
Sorooshian S., M. H. Costin, "Large scale systems modelling, by M. S. Mahmoud and M. G. Singh" (Book review), Automatica **19**, 3, p. 351, May, 1983.

## Volume 19, Issue 4 — July, 1983

Kawahara M., "Tracking control system using image sensor for arc welding" (Regular paper), Automatica **19**, 4, pp. 357–363, July, 1983.
Howze J. W., D. Ohm, "Control system synthesis with response insensitivity" (Regular paper), Automatica **19**, 4, pp. 365–371, July, 1983.
Levy B. C., D. A. Castañon, G. C. Verghese, A. S. Willsky, "A scattering framework for decentralized estimation problems" (Regular paper), Automatica **19**, 4, pp. 373–384, July, 1983.
Ladde G. S., D. D. Šiljak, "Multiparameter singular perturbations of linear systems with multiple time scales" (Regular paper), Automatica **19**, 4, pp. 385–394, July, 1983.
Dorato P., "Theoretical developments in discrete-time control" (Brief paper), Automatica **19**, 4, pp. 395–400, July, 1983.
Wellstead P. E., "The ball and hoop system" (Brief paper), Automatica **19**, 4, pp. 401–406, July, 1983.
D'Hulster F. M., R. M. C. De Keyser, A. R. Van Cauwenberghe, "Simulations of adaptive controllers for a paper machine headbox" (Brief paper), Automatica **19**, 4, pp. 407–414, July, 1983.
Toivonen H. T., "Variance constrained self-tuning control" (Brief paper), Automatica **19**, 4, pp. 415–418, July, 1983.
Latawiec K., M. Chyra, "On low frequency and long-run effects in self-tuning control" (Brief paper), Automatica **19**, 4, pp. 419–424, July, 1983.
Stoica P., T. Söderström, "Optimal instrumental-variable methods for identification of multivariable linear systems" (Brief paper), Automatica **19**, 4, pp. 425–429, July, 1983.
Bar-Shalom Y., K. Birmiwal, "Consistency and robustness of

PDAF for target tracking in cluttered environments" (Brief paper), Automatica **19**, 4, pp. 431–437, July, 1983.
Ho Y. C., Xiren Cao, C. Cassandras, "Infinitesimal and finite perturbation analysis for queueing networks" (Brief paper), Automatica **19**, 4, pp. 439–445, July, 1983.
Hannan E. J., L. Kavalieris, "Linear estimation of ARMA processes" (Technical Communiqué), Automatica **19**, 4, pp. 447–448, July, 1983.
Kumar R., J. B. Moore, "On adaptive minimum variance regulation for non-minimum phase plants" (Technical Communiqué), Automatica **19**, 4, pp. 449–451, July, 1983.
Elliott R. J., "Application of variational inequalities to stochastic control, by A. Bensoussan and J. L. lions" (Book review), Automatica **19**, 4, p. 453, July, 1983.
Pau L. F., "Stochastic control for economic models, by D. Kendrick" (Book review), Automatica **19**, 4, p. 455, July, 1983.
Koivo H. N., "Digital control of dynamic systems, by G. F. Franklin and J. D. Powell" (Book review), Automatica **19**, 4, pp. 457–458, July, 1983.

## Volume 19, Issue 5 — September, 1983

Axelby G. S., "Research surveys" (Editorial), Automatica **19**, 5, p. 469, September, 1983.
Åström K. J., "Theory and applications of adaptive control — a survey" (Survey paper), Automatica **19**, 5, pp. 471–486, September, 1983.
Bij J. D. van der, J. H. van Schuppen, "Prediction of railway power demand" (Regular paper), Automatica **19**, 5, pp. 487–494, September, 1983.
Narendra K. S., Ph. Mars, "The use of learning algorithms in telephone traffic routing - a methodology" (Regular paper), Automatica **19**, 5, pp. 495–502, September, 1983.
Bierman G. J., "a new computationally efficient fixed-interval, discrete-time smoother" (Regular paper), Automatica **19**, 5, pp. 503–511, September, 1983.
Kouvaritakis B., R. G. Cameron, "The use of Walsh functions in multivariable limit cycle prediction" (Regular paper), Automatica **19**, 5, pp. 513–522, September, 1983.
Barmish B. R., I. R. Petersen, A. Feuer, "Linear ultimate boundedness control of uncertain dynamical systems" (Regular paper), Automatica **19**, 5, pp. 523–532, September, 1983.
Commault C., J. M. Dion, "Transfer matrix approach to the triangular block decoupling problem" (Regular paper), Automatica **19**, 5, pp. 533–543, September, 1983.
Pachter M., "Guidelines for automatic gearbox design for an electrically propelled vehicle" (Brief paper), Automatica **19**, 5, pp. 543–549, September, 1983.
Harris T. L., R. A. DeCarlo, S. Richter, "A continuation approach to eigenvalue assignment" (Brief paper), Automatica **19**, 5, pp. 551–555, September, 1983.
Kawasaki N., E. Shimemura, "Determining quadratic weighting matrices to locate poles in a specified region" (Brief paper), Automatica **19**, 5, pp. 557–560, September, 1983.
Caglayan A. K., R. E. Lancraft, "A separated bias identification and state estimation algorithm for nonlinear systems" (Brief paper), Automatica **19**, 5, pp. 561–570, September, 1983.
Mori T., E. Noldus, M. Kuwahara, "A way to stabilize linear systems with delayed state" (Brief paper), Automatica **19**, 5, pp. 571–573, September, 1983.
Erol Y., K. Loparo, "Deadbeat control of discrete-time systems with singular state matrix using canonical decomposition" (Technical Communiqué), Automatica **19**, 5, pp. 575–577, September, 1983.
Horowitz I., "Feedback design of systems with significant uncertainty, by M. J. Ashworth" (Book review), Automatica **19**, 5, p. 581, September, 1983.
Villadsen J., "Chemical process dynamics, by R. Mohilla and B. Ferencz" (Book review), Automatica **19**, 5, p. 583, September, 1983.
Curtain R. F., "Green's function and transfer functions handbook, by A. G. Butkovskiy" (Book review), Automatica **19**, 5, p. 585, September, 1983.
Mansour M., "Linear control system analysis and design, by J. D'Azzo and C. H. Houpis" (Book review), Automatica **19**, 5, p. 587, September, 1983.

## Volume 19, Issue 6 — November, 1983

Sage A. P., "Control frontiers in knowledge based man-machine systems" (Editorial), Automatica **19**, 6, p. 593, November, 1983.
Johannsen G., J. E. Rijnsdorp, A. P. Sage, "Human system interface concerns in support system design" (Regular paper), Automatica **19**, 6, pp. 595–603, November, 1983.
Sheridan T. B., T. Vámos, S. Aida, "Adapting automation to man, culture and society" (Regular paper), Automatica **19**, 6, pp. 605–612, November, 1983.
Rouse W. B., "Models of human problem solving: detection, diagnosis, and compensation for system failures" (Regular paper), Automatica **19**, 6, pp. 613–625, November, 1983.
Fischer G., "Symbiotic, knowledge-based computer support systems" (Regular paper), Automatica **19**, 6, pp. 627–636, November, 1983.
Sheridan T. B., "Measuring, modeling, and augmenting reliability of man-machine systems" (Regular paper), Automatica **19**, 6, pp. 637–645, November, 1983.
Cullingford R. E., L. J. Joseph, "A heuristically 'optimal' knowledge base organization technique" (Regular paper), Automatica **19**, 6, pp. 647–654, November, 1983.
Ehrich R. W., "DMS — a system for defining and managing human-computer dialogues" (Regular paper), Automatica **19**, 6, pp. 655–662, November, 1983.
Pew R. W., S. Baron, "Perspectives on human performance modelling" (Regular paper), Automatica **19**, 6, pp. 663–676, November, 1983.
Margulies F., H. Zemanek, "Man's role in man-machine systems" (Brief paper), Automatica **19**, 6, pp. 677–683, November, 1983.
Ohsuga S., "Knowledge-based man-machine systems" (Brief paper), Automatica **19**, 6, pp. 685–691, November, 1983.
Wewerinke P. H., "Model of the human observer and decision maker — theory and validation" (Brief paper), Automatica **19**, 6, pp. 693–696, November, 1983.
Wuwongse V., S. Kobayashi, A. Ichikawa, "An interactive system for supporting multiobjective decision making" (Brief paper), Automatica **19**, 6, pp. 697–702, November, 1983.
Boettcher K. L., A. H. Levis, "Modeling and analysis of teams of interacting decisionmakers with bounded rationality" (Brief paper), Automatica **19**, 6, pp. 703–709, November, 1983.
Stein W., P. H. Wewerinke, "Human display monitoring and failure detection: control theoretic models and experiments" (Brief paper), Automatica **19**, 6, pp. 711–718, November, 1983.
Terano T., Y. Murayama, N. Akiyama, "Human reliability and safety evaluation of man-machine systems" (Brief paper), Automatica **19**, 6, pp. 719–722, November, 1983.
Schumacher W., G. Geiser, "Human control strategies in concurrent binary tasks under overload conditions" (Brief paper), Automatica **19**, 6, pp. 723–727, November, 1983.
Kokawa M., S. Miyazaki, S. Shingai, "Fault location using digraph and inverse direction search with application" (Brief

paper), Automatica **19**, 6, pp. 729–735, November, 1983.
Nagai M., "Analysis of rider and single-track-vehicle system; its application to computer-controlled bicycles" (Brief paper), Automatica **19**, 6, pp. 737–740, November, 1983.
Döring B., A. Knäuper, "A simulation study with a combined network and production systems model of pilot behaviour on an ILS-approach" (Brief paper), Automatica **19**, 6, pp. 741–747, November, 1983.
Balakrishna S., J. R. Raol, M. S. Rajamurthy, "Contributions of congruent pitch motion cue to human activity in manual control" (Brief paper), Automatica **19**, 6, pp. 749–754, November, 1983.
Martin T., "Human software requirements engineering for computer-controlled manufacturing systems" (Brief paper), Automatica **19**, 6, pp. 755–758, November, 1983.
Guida G., C. Tasso, "An expert intermediary system for interactive document retrieval" (Brief paper), Automatica **19**, 6, pp. 759–766, November, 1983.
Williges R. C., B. H. Williges, "Human-computer dialogue design considerations" (Brief paper), Automatica **19**, 6, pp. 767–773, November, 1983.
Bainbridge L., "Ironies of automation" (Brief paper), Automatica **19**, 6, pp. 775–779, November, 1983.

## Volume 20, Issue 1 — January, 1984

Cuénod M., "Obituary Ed. Gerecke 1899–1983" (Editorial), Automatica **20**, 1, p. 1, January, 1984.
Amerongen J. van, "Adaptive steering of ships — a model reference approach" (Regular paper), Automatica **20**, 1, pp. 3–14, January, 1984.
Mäkilä P. M., T. Westerlund, H. T. Toivonen, "Constrained linear quadratic Gaussian control with process applications" (Regular paper), Automatica **20**, 1, pp. 15–29, January, 1984.
Åström K. J., P. Hagander, J. Sternby, "Zeros of sampled systems" (Regular paper), Automatica **20**, 1, pp. 31–38, January, 1984.
Peterka V., "Predictor-based self-tuning control" (Regular paper), Automatica **20**, 1, pp. 39–50, January, 1984.
Krtolica R., "A singular perturbation model of reliability in systems control" (Regular paper), Automatica **20**, 1, pp. 51–57, January, 1984.
Shokoohi S., L. M. Silverman, P. Van Dooren, "Linear time-variable systems: stability of reduced models" (Regular paper), Automatica **20**, 1, pp. 59–67, January, 1984.
Delfour M. C., "Linear optimal control of systems with state and control variable delays" (Regular paper), Automatica **20**, 1, pp. 69–77, January, 1984.
Harten A. van, "Singularly perturbed systems of diffusion type and feedback control" (Regular paper), Automatica **20**, 1, pp. 79–91, January, 1984.
Kramer J., J. Magee, M. Sloman, "A software architecture for distributed computer control systems" (Regular paper), Automatica **20**, 1, pp. 93–102, January, 1984.
Meyer G., R. Su, L. R. Hunt, "Application of nonlinear transformations to automatic flight control" (Brief paper), Automatica **20**, 1, pp. 103–107, January, 1984.
Lu Wu-Sheng, K. S. P. Kumar, "A staircase model for unknown multivariable systems and design of regulators" (Brief paper), Automatica **20**, 1, pp. 109–112, January, 1984.
Koning W. L. de, "Optimal estimation of linear discrete-time systems with stochastic parameters" (Brief paper), Automatica **20**, 1, pp. 113–115, January, 1984.
Patel R. V., M. Toda, "Bounds on performance of nonstationary continuous-time filters under modelling uncertainty" (Brief paper), Automatica **20**, 1, pp. 117–120, January, 1984.
Saridis G. N., J. H. Graham, "Linguistic decision schemata for intelligent robots" (Brief paper), Automatica **20**, 1, pp. 121–126, January, 1984.
Rajagopalan T., "Pole assignment with output feedback" (Technical Communiqué), Automatica **20**, 1, pp. 127–128, January, 1984.
El-Sherief H., M. A. Maud, "Dedicated microprocessors for realtime identification of multivariable systems" (Technical Communiqué), Automatica **20**, 1, pp. 129–131, January, 1984.
España M. D., R. S. Ortega, J. J. Espino, "Variable structure systems with chattering reduction: a microprocessor based design" (Technical Communiqué), Automatica **20**, 1, pp. 133–134, January, 1984.
Tugnait J. K., "An addendum and correction to: 'On identification and adaptive estimation for systems with interrupted observations'" (Correspondence item), Automatica **20**, 1, pp. 135–136, January, 1984.
Unbehauen H., "Rechnergestützte Optimierung statischer und dynamischer Systeme, by H. G. Jacob" (Book review), Automatica **20**, 1, pp. 137–138, January, 1984.
Seborg D. E., "Digital control systems, by R. Isermann" (Book review), Automatica **20**, 1, pp. 138–139, January, 1984.

## Volume 20, Issue 2 — March, 1984

Cohn N., "Recollections of the evolution of realtime control applications to power systems" (Regular paper), Automatica **20**, 2, pp. 145–162, March, 1984.
Cori R., C. Maffezzoni, "Practical-optimal control of a drum boiler power plant" (Regular paper), Automatica **20**, 2, pp. 163–173, March, 1984.
Dang van Mien H., D. Normand-Cyrot, "Nonlinear state affine identification methods: applications to electrical power plants" (Regular paper), Automatica **20**, 2, pp. 175–188, March, 1984.
Modir H., R. A. Schlueter, "A dynamic state estimator for power system dynamic security assessment" (Regular paper), Automatica **20**, 2, pp. 189–199, March, 1984.
Bosch P. P. J. van den, G. Honderd, T. W. Siemensma, "A hierarchical approach to dynamic optimization of power systems" (Brief paper), Automatica **20**, 2, pp. 201–203, March, 1984.
Kaufman H., R. Roy, Xinhe Xu, "Model reference adaptive control of drug infusion rate" (Brief paper), Automatica **20**, 2, pp. 205–209, March, 1984.
Ackermann J., "Robustness against sensor failures" (Brief paper), Automatica **20**, 2, pp. 211–215, March, 1984.
Gauvrit M., "Bayesian adaptive filter for tracking with measurements of uncertain origin" (Brief paper), Automatica **20**, 2, pp. 217–224, March, 1984.
Haas V. B., "Reduced order state estimation for linear systems with exact measurements" (Brief paper), Automatica **20**, 2, pp. 225–229, March, 1984.
Ahmed M. S., "Fast GLS algorithm for parameter estimation" (Brief paper), Automatica **20**, 2, pp. 231–236, March, 1984.
Dwolatzky B., "Intermediate domain system identification using Walsh transforms" (Brief paper), Automatica **20**, 2, pp. 237–242, March, 1984.
Bohn E. V., "Recursive evaluation of Walsh coefficients for multiple integrals of Walsh series" (Brief paper), Automatica **20**, 2, pp. 243–246, March, 1984.
Pichai V., M. E. Sezer, D. D. Šiljak, "A graph-theoretic characterization of structurally fixed modes" (Brief paper), Automatica **20**, 2, pp. 247–250, March, 1984.
Luh P. B., Shi-Chung Chang, Tsu-Shuan Chang, "Solutions and properties of multi-stage Stackelberg games" (Brief paper), Automatica **20**, 2, pp. 251–256, March, 1984.
Balachandran K., D. Somasundaram, "Controllability of nonlinear systems consisting of a bilinear mode with

time-varying delays in control" (Technical Communiqué), Automatica **20**, 2, pp. 257–258, March, 1984.
Paraskevopoulos P. N., M. A. Christodoulou, A. K. Boglu, "An algorithm for the computation of the transfer function matrix for singular systems" (Technical Communiqué), Automatica **20**, 2, pp. 259–260, March, 1984.
Clarke D. W., P. J. Gawthrop, "Comments on: 'On adaptive minimum variance regulation for non-minimum phase plants'" (Correspondence item), Automatica **20**, 2, p. 261, March, 1984.
Moore J. B., "Comments on: 'On adaptive minimum variance regulation for non-minimum phase plants'. Author's reply" (Correspondence item), Automatica **20**, 2, pp. 261–262, March, 1984.
Schmidt G., "Modern digital control systems, by R. G. Jacqout" (Book review), Automatica **20**, 2, p. 263, March, 1984.
Wittenmark B., "Computer control of industrial processes, S. Bennett and D. A. Linkens (editors)" (Book review), Automatica **20**, 2, p. 264, March, 1984.
Marton J., "Scientific fundamentals of robotics 1. Dynamics of manipulation robots: theory and application, M. Vukobratovic and V. Potkonjak (editors)" (Book review), Automatica **20**, 2, pp. 265–266, March, 1984.

## Volume 20, Issue 3 — May, 1984

Axelby G. S., "Transitions — new editors" (Editorial), Automatica **20**, 3, pp. 271–272, May, 1984.
Saksena V. R., J. O'Reilly, P. V. Kokotovic, "Singular perturbations and time-scale methods in control theory: survey 1976–1983" (Survey paper), Automatica **20**, 3, pp. 273–293, May, 1984.
Lorell K. R., R. R. Clappier, W. F. Barrows, G. K. Lee, "A microprocessor-based position control system for a telescope secondary mirror" (Regular paper), Automatica **20**, 3, pp. 295–308, May, 1984.
Xianya Xie, R. J. Evans, "Discrete-time adaptive control for deterministic time-varying systems" (Regular paper), Automatica **20**, 3, pp. 309–319, May, 1984.
Nishikawa Y., N. Sannomiya, T. Ohta, H. Tanaka, "A method for auto-tuning of PID control parameters" (Regular paper), Automatica **20**, 3, pp. 321–332, May, 1984.
Gevers M., V. Wertz, "Uniquely identifiable state-space and ARMA parametrizations for multivariable linear systems" (Regular paper), Automatica **20**, 3, pp. 333–347, May, 1984.
Dorsey J. F., R. A. Schlueter, "Structural archetypes for coherency: a framework for comparing power system equivalents" (Brief paper), Automatica **20**, 3, pp. 349–352, May, 1984.
Stokić D., M. Vukobratović, "Practical stabilization of robotic systems by decentralized control" (Brief paper), Automatica **20**, 3, pp. 353–358, May, 1984.
Ng T. S., Z. H. Qureshi, Y. C. Cheah, "Optimal input design for an AR model with output constraints" (Brief paper), Automatica **20**, 3, pp. 359–363, May, 1984.
Campbell S. L., "Regularizations of linear time varying singular systems" (Brief paper), Automatica **20**, 3, pp. 365–370, May, 1984.
Balas M. J., "Linear distributed parameter systems: closed-loop exponential stability with a finite-dimensional controller" (Brief paper), Automatica **20**, 3, pp. 371–377, May, 1984.
Utkin V. I., "Nonlinear control engineering, by D. P. Atherton" (Book review), Automatica **20**, 3, pp. 379–380, May, 1984.
Saridis G. N., "Scientific fundamentals of robotics 2. Control of manipulation robots, by M. Vukobratović and D. Stokić" (Book review), Automatica **20**, 3, pp. 380–381, May, 1984.
Gupta M. M., "Fuzzy techniques in pattern recognition, by A. Kandel" (Book review), Automatica **20**, 3, p. 381, May, 1984.

## Volume 20, Issue 4 — July, 1984

Isermann R., "Process fault detection based on modeling and estimation methods — a survey" (Survey paper), Automatica **20**, 4, pp. 387–404, July, 1984.
Katoh R., M. Mori, "Control method of biped locomotion giving asymptotic stability trajectory" (Regular paper), Automatica **20**, 4, pp. 405–414, July, 1984.
Zhu Yue-Xin, Bai-Wu Wan, "The parameter identification of a population model of China" (Regular paper), Automatica **20**, 4, pp. 415–428, July, 1984.
Corrêa G. O., K. Glover, "Pseudo-canonical forms, identifiable parametrizations and simple parameter estimation for linear multivariable systems: input-output models" (Regular paper), Automatica **20**, 4, pp. 429–442, July, 1984.
Corrêa G. O., K. Glover, "Pseudo-canonical forms, identifiable parametrizations and simple parameter estimation for linear multivariable systems: parameter estimation" (Regular paper), Automatica **20**, 4, pp. 443–452, July, 1984.
Tuschák R., R. Bars, R. Haber, M. Habermayer, T. Kovács' Et Al., "ICONGRAPH - program package for interactive controller design by graphical plotting" (Regular paper), Automatica **20**, 4, pp. 453–463, July, 1984.
Owens D. H., A. Chotai, "Robust sampled regulators for stable systems from plant step data" (Brief paper), Automatica **20**, 4, pp. 465–469, July, 1984.
Rootzén H., J. Sternby, "Consistency in least-squares estimation: a Bayesian approach" (Brief paper), Automatica **20**, 4, pp. 471–475, July, 1984.
Kung Min-Chio, B. F. Womack, "Discrete time adaptive control of linear systems with preload nonlinearity" (Brief paper), Automatica **20**, 4, pp. 477–479, July, 1984.
Kidd P. T., "Comments on 'Self-tuning and stable adaptive control of a batch polymerization reactor'" (Correspondence item), Automatica **20**, 4, p. 481, July, 1984.
Shah S. L., C. Kiparissides, "Comments on 'Self-tuning and stable adaptive control of a batch polymerization reactor'. Author's reply" (Correspondence item), Automatica **20**, 4, p. 482, July, 1984.
Hassan M. F., "Comments on: review of 'Dynamical hierarchical control' by M. Singh (Olsder, 1982)" (Correspondence item), Automatica **20**, 4, pp. 483–484, July, 1984.
Olsder G. J., "Comments on: review of 'Dynamical hierarchical control' by M. Singh (Olsder, 1982). Reviewer's reply" (Correspondence item), Automatica **20**, 4, p. 484, July, 1984.
Bagchi A., "Research survey" (Other), Automatica **20**, 4, p. 485, July, 1984.
MacFarlane A. G. J., "Multivariable feedback systems, by F. M. Callier and C. A. Desoer" (Book review), Automatica **20**, 4, p. 487, July, 1984.
Strietzel R., "Abtastregelung, Band I, Analyse und Synthese. (in German) (Sampled-data control, vol. I. analysis and synthesis), by J. Ackermann" (Book review), Automatica **20**, 4, pp. 488–489, July, 1984.
Unbehauen H., "Abtastregelung, Band II, Entwurf robuster Systeme. (in German) (Sampled-data control, vol. II. design of robust systems), by J. Ackermann" (Book review), Automatica **20**, 4, pp. 489–490, July, 1984.
Gawthrop P. J., "Real-time computing with applications to data acquisition and control, D. A. Mellichamp (editor)" (Book review), Automatica **20**, 4, pp. 490–491, July, 1984.
Ackermann J., "Robustness against sensor failures (Erratum)" (Other), Automatica **20**, 4, p. 497, July, 1984.

## Volume 20, Issue 5 — September, 1984

Ljung L., B. D. O. Anderson, "Adaptive control, where are we ?" (Editorial), Automatica **20**, 5, pp. 499–500, September, 1984.
Clarke D. W., "Self-tuning control of nonminimum-phase systems" (Regular paper), Automatica **20**, 5, pp. 501–517, September, 1984.
Goodwin G. C., D. J. Hill, M. Palaniswami, "A perspective on convergence of adaptive control algorithms" (Regular paper), Automatica **20**, 5, pp. 519–531, September, 1984.
Elliott H., W. A. Wolovich, "Parameterization issues in multivariable adaptive control" (Regular paper), Automatica **20**, 5, pp. 533–545, September, 1984.
Voronov A. A., V. Yu. Rutkovsky, "State-of-the-art and prospects of adaptive systems" (Regular paper), Automatica **20**, 5, pp. 547–557, September, 1984.
Balestrino A., G. De Maria, A.S. I. Zinober, "Nonlinear adaptive model-following control" (Regular paper), Automatica **20**, 5, pp. 559–568, September, 1984.
Kosut R. L., C. R. Johnson, Jr., "An input-output view of robustness in adaptive control" (Regular paper), Automatica **20**, 5, pp. 569–581, September, 1984.
Ioannou P. A., P. V. Kokotovic, "Instability analysis and improvement of robustness of adaptive control" (Regular paper), Automatica **20**, 5, pp. 583–594, September, 1984.
Wittenmark B., K. J. Åström, "Practical issues in the implementation of self-tuning control" (Regular paper), Automatica **20**, 5, pp. 595–605, September, 1984.
Martin-Sánchez J. M., S. L. Shah, "multivariable adaptive predictive control of a binary distillation column" (Regular paper), Automatica **20**, 5, pp. 607–620, September, 1984.
Dochain D., G. Bastin, "Adaptive identification and control algorithms for nonlinear bacterial growth systems" (Regular paper), Automatica **20**, 5, pp. 621–634, September, 1984.
Nicosia S., P. Tomei, "Model reference adaptive control algorithms for industrial robots" (Regular paper), Automatica **20**, 5, pp. 635–644, September, 1984.
Åström K. J., T. Hägglund, "Automatic tuning of simple regulators with specifications on phase and amplitude margins" (Regular paper), Automatica **20**, 5, pp. 645–651, September, 1984.
Rohrs C. E., M. Athans, L. Valavani, G. Stein, "Some design guidelines for discrete-time adaptive controllers" (Regular paper), Automatica **20**, 5, pp. 653–660, September, 1984.
Grimble M. J., "Implicit and explicit LQG self-tuning controllers" (Regular paper), Automatica **20**, 5, pp. 661–669, September, 1984.
Mäkilä P. M., "A self-tuning regulator based on optimal output feedback theory" (Regular paper), Automatica **20**, 5, pp. 671–679, September, 1984.
Greco C., G. Menga, E. Mosca, G. Zappa, "Performance improvements of self-tuning controllers by multistep horizons: the MUSMAR approach" (Regular paper), Automatica **20**, 5, pp. 681–699, September, 1984.
Dugard L., G. C. Goodwin, Xie Xianya, "The role of the interactor matrix in multivariable stochastic adaptive control" (Regular paper), Automatica **20**, 5, pp. 701–709, September, 1984.

## Volume 20, Issue 6 — November, 1984

Walrath C. D., "Adaptive bearing friction compensation based on recent knowledge of dynamic friction" (Regular paper), Automatica **20**, 6, pp. 717–727, November, 1984.
Rodden J. J., "Closed-loop magnetic control of a spin-stabilized satellite" (Regular paper), Automatica **20**, 6, pp. 729–735, November, 1984.
Birmiwal K., Y. Bar-Shalom, "Dual control guidance for simultaneous identification and interception" (Regular paper), Automatica **20**, 6, pp. 737–749, November, 1984.
Mayne D. Q., K. J. Åström, J. M. C. Clark, "A new algorithm for recursive estimation of parameters in controlled ARMA processes" (Regular paper), Automatica **20**, 6, pp. 751–760, November, 1984.
Pearson A. E., C. Y. Wuu, "Decoupled delay estimation in the identification of differential delay systems" (Regular paper), Automatica **20**, 6, pp. 761–772, November, 1984.
Terashima K., H. Akashi, "Decomposition and stability of linear systems with multiplicative noise" (Regular paper), Automatica **20**, 6, pp. 773–785, November, 1984.
Kollodge J. C., J. A. Sand, "Advanced star tracker design using the charge injection device" (Brief paper), Automatica **20**, 6, pp. 787–791, November, 1984.
De Larminat Ph., "On the stabilizability condition in indirect adaptive control" (Brief paper), Automatica **20**, 6, pp. 793–795, November, 1984.
Thathachar M. A. L., K. R. Ramakrishnan, "A cooperative game of a pair of learning automata" (Brief paper), Automatica **20**, 6, pp. 797–801, November, 1984.
Vukobratović M., D. Stokić, "Suboptimal synthesis of a robust decentralized control for large-scale mechanical systems" (Technical Communiqué), Automatica **20**, 6, pp. 803–807, November, 1984.
Grimble M. J., "Research survey" (Other), Automatica **20**, 6, pp. 809–810, November, 1984.
Bosman D., "Handbook of measurement science, by P. H. Sydenham" (Book review), Automatica **20**, 6, pp. 811–812, November, 1984.
Atherton D. P., "Optimal relay and saturating control systems synthesis, by E. P. Ryan" (Book review), Automatica **20**, 6, pp. 812–813, November, 1984.
Verdiere P., "Linear system fundamentals, continuous and discrete, classic and modern, by J. G. Reid" (Book review), Automatica **20**, 6, pp. 813–814, November, 1984.
Bensoussan A., "Optimization over time, by P. Whittle" (Book review), Automatica **20**, 6, pp. 814–816, November, 1984.

## Volume 21, Issue 1 — January, 1985

Ribbens-Pavella M., F. J. Evans, "Direct methods for studying dynamics of large-scale electric power systems — a survey" (Survey paper), Automatica **21**, 1, pp. 1–21, January, 1985.
Broussard J. R., D. R. Downing, W. H. Bryant, "Design and flight testing of a digital optimal control general aviation autopilot" (Regular paper), Automatica **21**, 1, pp. 23–34, January, 1985.
Ohm D. Y., J. W. Howze, S. P. Bhattacharyya, "Structural synthesis of multivariable controllers" (Regular paper), Automatica **21**, 1, pp. 35–55, January, 1985.
Curtain R. F., "Pole assignment for distributed systems by finite dimensional control" (Regular paper), Automatica **21**, 1, pp. 57–67, January, 1985.
Vannelli A., M. Vidyasagar, "Maximal Lyapunov functions and domains of attraction for autonomous nonlinear systems" (Regular paper), Automatica **21**, 1, pp. 69–80, January, 1985.
Koivo H. N., S. Pohjolainen, "Tuning of multivariable PI-controllers for unknown systems with input delay" (Brief paper), Automatica **21**, 1, pp. 81–91, January, 1985.
Desrochers A. A., R. Y. Al-Jaar, "A method for high order linear system reduction and nonlinear system simplification" (Brief paper), Automatica **21**, 1, pp. 93–100, January, 1985.
Kramer U., "On the application of fuzzy sets to the analysis of the system driver-vehicle-environment" (Brief paper), Automatica **21**, 1, pp. 101–107, January, 1985.
Willems J. C., "Algebraic theory for multivariable linear systems, by H. Blomberg and R. Ylinen" (Book review), Automatica **21**, 1, pp. 109–110, January, 1985.

Lefkowitz I., "Applied control theory, by J. R. Leigh" (Book review), Automatica **21**, 1, pp. 110–111, January, 1985.
Kučera V., "Polynomials and linear control systems, by S. Barnett" (Book review), Automatica **21**, 1, pp. 111–112, January, 1985.

## Volume 21, Issue 2 — March, 1985

Kubrusly C. S., H. Malebranche, "Sensors and controllers location in distributed systems — a survey" (Survey paper), Automatica **21**, 2, pp. 117–128, March, 1985.
Vajk I., M. Vajta, L. Keviczky, R. Haber, J. Hetthéssy' K. Kovács, "Adaptive load-frequency control of the Hungarian power system" (Regular paper), Automatica **21**, 2, pp. 129–137, March, 1985.
Bastin G., M. Gevers, "Identification and optimal estimation of random fields from scattered point-wise data" (Regular paper), Automatica **21**, 2, pp. 139–155, March, 1985.
Ljung S., L. Ljung, "Error propagation properties of recursive least-squares adaptation algorithms" (Regular paper), Automatica **21**, 2, pp. 157–167, March, 1985.
Karakitsos E., B. Rustem, "Optimal fixed rules and simple feedback laws in the design of economic policy" (Regular paper), Automatica **21**, 2, pp. 169–180, March, 1985.
Saksena V. R., J. B. Cruz, Jr., "Optimal and near-optimal incentive strategies in the hierarchical control of Markov chains" (Regular paper), Automatica **21**, 2, pp. 181–191, March, 1985.
Shih L. Y., "Automatic guidance of mobile robots in two-way traffic" (Brief paper), Automatica **21**, 2, pp. 193–198, March, 1985.
Unton F. Z., "Instrumental variable method for systems with filtered white noise input" (Brief paper), Automatica **21**, 2, pp. 199–202, March, 1985.
Malinowski K., M. G. Singh, "Controllability and observability of expanded systems with overlapping decompositions" (Brief paper), Automatica **21**, 2, pp. 203–208, March, 1985.
Bünz D., K. Gütschow, "CATPAC — an interactive software package for control system design" (Brief paper), Automatica **21**, 2, pp. 209–213, March, 1985.
Gilles E. D., U. Knöpp, "Structural theory of distributed systems, by A. G. Butkovskiy" (Book review), Automatica **21**, 2, pp. 215–216, March, 1985.
O'Malley, Jr. R. E., "Time-scale modeling of dynamic networks with applications to power systems, by J. H. Chow" (Book review), Automatica **21**, 2, pp. 216–217, March, 1985.
Davis M. H. A., "Filtering and smoothing: an introduction to martingales, stochastic integrals and estimation, by V. Krishnan" (Book review), Automatica **21**, 2, pp. 217–219, March, 1985.
Hassan M. F., "Large scale systems, modeling and control, by M. Jamshidi" (Book review), Automatica **21**, 2, pp. 219–220, March, 1985.

## Volume 21, Issue 3 — May, 1985

Kokotovic P. V., "Recent trends in feedback design: an overview" (Regular paper), Automatica **21**, 3, pp. 225–236, May, 1985.
Zaborszky J., G. Huang, S. Y. Lin, "Control of reactive power and voltage in emergencies" (Regular paper), Automatica **21**, 3, pp. 237–246, May, 1985.
Anderson B. D. O., "Adaptive systems, lack of persistency of excitation and bursting phenomena" (Regular paper), Automatica **21**, 3, pp. 247–258, May, 1985.
Aplevich J. D., "Minimal representations of implicit linear systems" (Regular paper), Automatica **21**, 3, pp. 259–269, May, 1985.
Calise A. J., D. D. Moerder, "Optimal output feedback design of systems with ill-conditioned dynamics" (Regular paper), Automatica **21**, 3, pp. 271–276, May, 1985.
Hodžic M., D. D. Šiljak, "Estimation and control of large sparse systems" (Regular paper), Automatica **21**, 3, pp. 277–292, May, 1985.
Eweda E., O. Macchi, "Tracking error bounds of adaptive nonstationary filtering" (Regular paper), Automatica **21**, 3, pp. 293–302, May, 1985.
Takeuchi Y., H. Akashi, "Least-squares state estimation of systems with state-dependent observation noise" (Regular paper), Automatica **21**, 3, pp. 303–313, May, 1985.
Ly Uy-Loi, A. E. Bryson, R. H. Cannon, "Design of low-order compensators using parameter optimization" (Brief paper), Automatica **21**, 3, pp. 315–318, May, 1985.
Merritt S. R., E. M. Cliff, H. J. Kelley, "Energy-modelled climb and climb-dash — the Kaiser technique" (Brief paper), Automatica **21**, 3, pp. 319–321, May, 1985.
Drouin M., H. Abou-Kandil, P. Bertrand, "Feedback control for linear discrete-time systems with time delays" (Brief paper), Automatica **21**, 3, pp. 323–327, May, 1985.
Tanaka S., T. Okita, "Optimal timing of observations for state estimation in a one-dimensional linear continuous system" (Brief paper), Automatica **21**, 3, pp. 329–331, May, 1985.
Willman W. W., "On second-order filter performance" (Brief paper), Automatica **21**, 3, pp. 333–336, May, 1985.
Chow J. H., "Modeling, analysis and control of dynamic systems, by W. J. Palm, III" (Book review), Automatica **21**, 3, p. 337, May, 1985.

## Volume 21, Issue 4 — July, 1985

Axelby G. S., "The 100th issue" (Editorial), Automatica **21**, 4, pp. 345–348, July, 1985.
Jacobs O. L. R., R. E. S. Bullingham, P. Lammer, H. J. McQuay, G. O'Sullivan' M. P. Reasbeck, "Modelling estimation and control in the relief of post-operative pain" (Regular paper), Automatica **21**, 4, pp. 349–360, July, 1985.
Freeman T. G., "Selecting the best linear transfer function model" (Regular paper), Automatica **21**, 4, pp. 361–370, July, 1985.
Rios-Neto A., J. J. Da Cruz, "A stochastic rudder control law for ship path-following autopilots" (Regular paper), Automatica **21**, 4, pp. 371–384, July, 1985.
Trulsson E., L. Ljung, "Adaptive control based on explicit criterion minimization" (Regular paper), Automatica **21**, 4, pp. 385–399, July, 1985.
Ioannou P., P. V. Kokotovic, "Decentralized adaptive control of interconnected systems with reduced-order models" (Regular paper), Automatica **21**, 4, pp. 401–412, July, 1985.
M'Saad M., R. Ortega, I. D. Landau, "Adaptive controller for discrete-time systems with arbitrary zeros: an overview" (Regular paper), Automatica **21**, 4, pp. 413–423, July, 1985.
Kreisselmeier G., "An approach to stable indirect adaptive control" (Regular paper), Automatica **21**, 4, pp. 425–431, July, 1985.
Postlethwaite I., Yung Kuan Foo, "Robustness with simultaneous pole and zero movement across the $j\omega$-axis" (Regular paper), Automatica **21**, 4, pp. 433–443, July, 1985.
Haessler R. W., "Production planning and scheduling for an integrated container company" (Regular paper), Automatica **21**, 4, pp. 445–452, July, 1985.
Halme A., J. Selkäinaho, J. Soininen, "Adaptive control with nonlinear filtering" (Brief paper), Automatica **21**, 4, pp. 453–463, July, 1985.
Berka M., D. B. Cherchas, "A discrete-time algorithm for nuclear reactor spatial control" (Brief paper), Automatica **21**, 4, pp. 465–471, July, 1985.
Metz L. D., B. Cyr, "Robust control performance of time-varying human controller models" (Brief paper),

Automatica **21**, 4, pp. 473–478, July, 1985.
Wheeler, Jr. R. M., K. S. Narendra, "Learning models for decentralized decision making" (Brief paper), Automatica **21**, 4, pp. 479–484, July, 1985.
Mahmoud M. S., M. G. Singh, "On the use of reduced-order models in output feedback design of discrete systems" (Brief paper), Automatica **21**, 4, pp. 485–489, July, 1985.
Sridharan G., M. C. Srisailam, V. S. Rao, "A note on the effect of asynchronous sampling on estimation accuracy" (Technical Communiqué), Automatica **21**, 4, pp. 491–493, July, 1985.
Tarokh M., "Fixed modes in multivariable systems using constrained controllers" (Technical Communiqué), Automatica **21**, 4, pp. 495–497, July, 1985.
Dumortier F. A. G., "Theory and practice of recursive identification, by L. Ljung and T. Söderström" (Book review), Automatica **21**, 4, pp. 499–501, July, 1985.
Graham J. H., "Interaction with the environment, by Ph. Coiffet" (Book review), Automatica **21**, 4, p. 501, July, 1985.
Asbjornsen O. A., "Chemical process control: an introduction to theory and practice, by G. Stephanopoulos" (Book review), Automatica **21**, 4, pp. 502–504, July, 1985.
Bagchi A., "Probability theory and mathematical statistics, by V. S. Pugachev" (Book review), Automatica **21**, 4, p. 504, July, 1985.
Eitelberg E., "Comments on 'A method for auto-tuning of PID control parameters'" (Correspondence item), Automatica **21**, 4, p. 505, July, 1985.

## Volume 21, Issue 5 — September, 1985

Zwartbol T., R. F. van den Dam, A. P. Terpstra, P. Th. L. M. van Woerkom, "Attitude estimation and control of manoeuvring spacecraft" (Regular paper), Automatica **21**, 5, pp. 513–526, September, 1985.
Parrish J. R., C. B. Brosilow, "Inferential control applications" (Regular paper), Automatica **21**, 5, pp. 527–538, September, 1985.
Andersen T. R., S. B. Nielsen, "An efficient single output fuzzy control algorithm for adaptive applications" (Regular paper), Automatica **21**, 5, pp. 539–545, September, 1985.
Dubois D., H. Prade, "Evidence measures based on fuzzy information" (Regular paper), Automatica **21**, 5, pp. 547–562, September, 1985.
Feintuch A., B. A. Francis, "Uniformly optimal control of linear feedback systems" (Regular paper), Automatica **21**, 5, pp. 563–574, September, 1985.
Cansever D. H., T. Başar, "Optimum/near-optimum incentive policies for stochastic decision problems involving parametric uncertainty" (Regular paper), Automatica **21**, 5, pp. 575–584, September, 1985.
Haurie A., M. Breton, "Market equilibrium in a multistage commodity network" (Regular paper), Automatica **21**, 5, pp. 585–597, September, 1985.
Vidyasagar M., N. Viswanadham, "Reliable stabilization using a multi-controller configuration" (Brief paper), Automatica **21**, 5, pp. 599–602, September, 1985.
Bittanti S., P. Bolzern, P. Colaneri, "The extended periodic Lyapunov lemma" (Brief paper), Automatica **21**, 5, pp. 603–605, September, 1985.
Young K. D., "On near optimal decentralized control" (Brief paper), Automatica **21**, 5, pp. 607–610, September, 1985.
Lamanna De R. R., R. Padilla, "On a realization method for discrete-time linear systems" (Technical Communiqué), Automatica **21**, 5, pp. 611–613, September, 1985.
Chen C. S., "Stepping motors and their microprocessor controls, by T. Kenjo" (Book review), Automatica **21**, 5, p. 615, September, 1985.
Vamos T., "Mr. Babbage's secret. The tale of a cypher — and APL, by O. I. Franksen" (Book review), Automatica **21**, 5, p. 616, September, 1985.
Ioannou P., "Adaptive filtering, prediction and control, by G. C. Goodwin and K. S. Sin" (Book review), Automatica **21**, 5, pp. 616–618, September, 1985.
Niekerk H. R. van, "Automation and control in transport, 2nd ed., by F. T. Barwell" (Book review), Automatica **21**, 5, pp. 618–619, September, 1985.

## Volume 21, Issue 6 — November, 1985

Isermann R., K.-H. Lachmann, "Parameter-adaptive control with configuration aids and supervision functions" (Regular paper), Automatica **21**, 6, pp. 625–638, November, 1985.
Vukobratović M., N. Kirćanski, "An approach to adaptive control of robotic manipulators" (Regular paper), Automatica **21**, 6, pp. 639–647, November, 1985.
Papageorgiou M., A. Messmer, "Continuous-time and discrete-time design of water flow and water level regulators" (Regular paper), Automatica **21**, 6, pp. 649–661, November, 1985.
Ježek J., V. Kučera, "Efficient algorithm for matrix spectral factorization" (Regular paper), Automatica **21**, 6, pp. 663–669, November, 1985.
Stoica P., T. Söderström, "Optimization with respect to covariance sequence parameters" (Regular paper), Automatica **21**, 6, pp. 671–675, November, 1985.
Ljung L., "On the estimation of transfer functions" (Regular paper), Automatica **21**, 6, pp. 677–696, November, 1985.
Yuan Zhen-Dong, L. Ljung, "Unprejudiced optimal open loop input design for identification of transfer functions" (Regular paper), Automatica **21**, 6, pp. 697–708, November, 1985.
Anderson B. D. O., "Identification of scalar errors-in-variables models with dynamics" (Regular paper), Automatica **21**, 6, pp. 709–716, November, 1985.
Khorasani K., M. A. Pai, "Asymptotic stability of nonlinear singularly perturbed systems using higher order corrections" (Regular paper), Automatica **21**, 6, pp. 717–727, November, 1985.
Nakamura M., "Short term load forecasting using daily updated load models" (Brief paper), Automatica **21**, 6, pp. 729–736, November, 1985.
Chen H. F., P. E. Caines, "On the adaptive control of a class of systems with random parameters and disturbances" (Brief paper), Automatica **21**, 6, pp. 737–741, November, 1985.
Toivonen H. T., P. M. Mäkilä, "A descent Anderson-Moore algorithm for optimal decentralized control" (Technical Communiqué), Automatica **21**, 6, pp. 743–744, November, 1985.
Offereins R. P., "Digital control system analysis and design, by C. L. Phillips and H. T. Nagle, Jr." (Book review), Automatica **21**, 6, pp. 745–746, November, 1985.
Johnson, Jr. C. R., "Computer-controlled systems: theory and design, by K. J. Åström and B. Wittenmark" (Book review), Automatica **21**, 6, pp. 746–748, November, 1985.
Proudfoot C. G., "Microprocessor-based process control, by C. D. Johnson" (Book review), Automatica **21**, 6, pp. 748–749, November, 1985.
Swan R. A., "The design and operation of flexible manufacturing systems (FMS), by P. Ránky" (Book review), Automatica **21**, 6, pp. 749–750, November, 1985.

## Volume 22, Issue 1 — January, 1986

Leonhard W., "Microcomputer control of high dynamic performance ac-drives — a survey" (Survey paper), Automatica **22**, 1, pp. 1–19, January, 1986.
Hertzanu B., D. Tabak, "Microprocessor-based control of industrial sewing machines" (Regular paper), Automatica

22, 1, pp. 21–31, January, 1986.
Fathi Z., W. F. Ramirez, "Use of optimal control theory for computing optimal injection policies for enhanced oil recovery" (Regular paper), Automatica **22**, 1, pp. 33–42, January, 1986.
Jover J. M., T. Kailath, "A parallel architecture for Kalman filter measurement update and parameter estimation" (Regular paper), Automatica **22**, 1, pp. 43–57, January, 1986.
Song T. L., J. L. Speyer, "The modified gain extended Kalman filter and parameter identification in linear systems" (Regular paper), Automatica **22**, 1, pp. 59–75, January, 1986.
Khargonekar P. P., K. Poolla, "Robust stabilization of distributed systems" (Regular paper), Automatica **22**, 1, pp. 77–84, January, 1986.
Vidyasagar M., H. Kimura, "Robust controllers for uncertain linear multivariable systems" (Regular paper), Automatica **22**, 1, pp. 85–94, January, 1986.
Stassinopoulos G. I., "Fenchel duality and smoothness of solution of the optimal routing problem" (Brief paper), Automatica **22**, 1, pp. 95–99, January, 1986.
Koutchoukali M. S., C. Laguerie, K. Najim, "Model reference adaptive control system of a catalytic fluidized bed reactor" (Brief paper), Automatica **22**, 1, pp. 101–104, January, 1986.
Venot A., L. Pronzato, E. Walter, J.-F. Lebruchec, "A distribution-free criterion for robust identification, with applications in system modelling and image processing" (Brief paper), Automatica **22**, 1, pp. 105–109, January, 1986.
Munack A., M. Thoma, "Application and decomposition/coordination methods to parameter identification problems in interconnected distributed parameter systems" (Brief paper), Automatica **22**, 1, pp. 111–116, January, 1986.
Faridani H. M., "Performance of Kalman filter with missing measurements" (Brief paper), Automatica **22**, 1, pp. 117–120, January, 1986.
Gajic Z., H. Khalil, "Multimodel strategies under random disturbances and imperfect partial observations" (Brief paper), Automatica **22**, 1, pp. 121–125, January, 1986.
Smith M. C., K. P. Sondergeld, "On the order of stable compensators" (Brief paper), Automatica **22**, 1, pp. 127–129, January, 1986.
Maeda H., M. Vidyasagar, "Infinite gain margin problem in multivariable feedback systems" (Brief paper), Automatica **22**, 1, pp. 131–133, January, 1986.
Babary J. P., "State-space and frequency-domain methods in the control of distributed parameter systems, S. P. Banks" (Book review), Automatica **22**, 1, pp. 135–136, January, 1986.

## Volume 22, Issue 2 — March, 1986

Dumont G. A., "Application of advanced control methods in the pulp and paper industry — a survey" (Survey paper), Automatica **22**, 2, pp. 143–153, March, 1986.
Di Masi G. B., L. Finesso, G. Picci, "Design of an L.Q.G. controller for single point moored large tankers" (Regular paper), Automatica **22**, 2, pp. 155–169, March, 1986.
O'Young S. D., B. A. Francis, "Optimal performance and robust stabilization" (Regular paper), Automatica **22**, 2, pp. 171–183, March, 1986.
Bitmead R. R., B. D. O. Anderson, T. S. Ng, "Convergence rate determination for gradient-based adaptive estimators" (Regular paper), Automatica **22**, 2, pp. 185–191, March, 1986.
Tsiligiannis C. A., S. A. Svoronos, "Deterministic convergence of a Clarke-Gawthrop self-tuning controller" (Regular paper), Automatica **22**, 2, pp. 193–197, March, 1986.
Goodwin G. C., R. Lozano-Leal, D. Q. Mayne, R. H. Middleton, "Rapprochement between continuous and discrete model reference adaptive control" (Regular paper), Automatica **22**, 2, pp. 199–207, March, 1986.
Bosch P. P. J. van den, W. Jongkind, A. C. M. van Swieten, "Adaptive attitude control for large-angle slew manoeuvres" (Brief paper), Automatica **22**, 2, pp. 209–215, March, 1986.
Thorp J. S., M. Ilic-Spong, M. Varghese, "An optimal secondary voltage-VAR control technique" (Brief paper), Automatica **22**, 2, pp. 217–221, March, 1986.
Candy J. V., T. Casper, R. Kane, "Plasma estimation: a noise cancelling application" (Brief paper), Automatica **22**, 2, pp. 223–229, March, 1986.
Puthenpura S., N. K. Sinha, "Modified maximum likelihood method for the robust estimation of system parameters from very noisy data" (Brief paper), Automatica **22**, 2, pp. 231–235, March, 1986.
Moore J. B., R. K. Boel, "Asymptotically optimum recursive prediction error methods in adaptive estimation and control" (Brief paper), Automatica **22**, 2, pp. 237–240, March, 1986.
Stanković S. S., M. S. Radenković, "Self-tuning servo for stochastic references" (Brief paper), Automatica **22**, 2, pp. 241–244, March, 1986.
Christodoulou M. A., "Decoupling in the design and synthesis of singular systems" (Brief paper), Automatica **22**, 2, pp. 245–249, March, 1986.
Pedrycz W., "Ranking multiple aspect alternatives — fuzzy relational equations approach" (Technical Communiqué), Automatica **22**, 2, pp. 251–253, March, 1986.
Baran R. H., J. P. Coughlin, "Comments on 'The parameter identification of a population model of China'" (Technical Communiqué), Automatica **22**, 2, pp. 255–256, March, 1986.
Bozic S. M., "Digital processing of signals, by M. Bellanger" (Book review), Automatica **22**, 2, pp. 257–258, March, 1986.
Jacobs O. L. R., "Modern control system theory, by M. Gopal" (Book review), Automatica **22**, 2, pp. 258–259, March, 1986.
Owens D. H., "Models and sensitivity of control systems, by A. Wierzbicki" (Book review), Automatica **22**, 2, pp. 260–261, March, 1986.

## Volume 22, Issue 3 — May, 1986

Axelby G. S., W. S. Levine, "Rapid publications: technical communiqués and correspondence" (Editorial), Automatica **22**, 3, p. 275, May, 1986.
Åström K. J., J. J. Anton, K.-E. Årzén, "Expert control" (Regular paper), Automatica **22**, 3, pp. 277–286, May, 1986.
Irisa T., S. Takata, R. Ueda, T. Sonoda, T. Mochizuki' "A novel approach on a parameter self-tuning method in an ac servo system" (Regular paper), Automatica **22**, 3, pp. 287–294, May, 1986.
Wagie D. A., R. E. Skelton, "Model reduction and controller synthesis in the presence of parameter uncertainty" (Regular paper), Automatica **22**, 3, pp. 295–308, May, 1986.
Grosdidier P., M. Morari, "Interaction measures for systems under decentralized control" (Regular paper), Automatica **22**, 3, pp. 309–319, May, 1986.
Sezer M. E., D. D. Šiljak, "Nested $\varepsilon$-decompositions and clustering of complex systems" (Regular paper), Automatica **22**, 3, pp. 321–331, May, 1986.
Lou Xi-Cheng, A. S. Willsky, G. C. Verghese, "Optimally robust redundancy relations for failure detection in uncertain systems" (Regular paper), Automatica **22**, 3, pp. 333–344, May, 1986.
Ölçer S., B. Egardt, M. Morf, "Convergence analysis of ladder algorithms for AR and ARMA models" (Regular paper), Automatica **22**, 3, pp. 345–354, May, 1986.

Schmitendorf W. E., B. R. Barmish, "Robust asymptotic tracking for linear systems with unknown parameters" (Brief paper), Automatica **22**, 3, pp. 355–360, May, 1986.
Fardanesh B., F. E. Villaseca, "Two-step optimal thermal generation scheduling" (Brief paper), Automatica **22**, 3, pp. 361–366, May, 1986.
Ross K. W., "Optimal dynamic routing in Markov queueing networks" (Brief paper), Automatica **22**, 3, pp. 367–370, May, 1986.
Mahmoud M. S., J. A. Assiri, "Performance analysis of two-level structures on finite-precision machines" (Brief paper), Automatica **22**, 3, pp. 371–375, May, 1986.
Chang Tsu-Shuan, Yu-Chi Ho, "A bound for a class of non-nested LQG team problems" (Brief paper), Automatica **22**, 3, pp. 377–379, May, 1986.
Tannenbaum A., "On the multivariable gain margin problem" (Brief paper), Automatica **22**, 3, pp. 381–383, May, 1986.
Barnett S., "Linear system theory and design, by C.-T. Chen" (Book review), Automatica **22**, 3, pp. 385–386, May, 1986.
Franklin G. F., "Discrete systems: analysis, control and optimization, by M. S. Mahmoud and M. G. Singh" (Book review), Automatica **22**, 3, pp. 386–387, May, 1986.
Mahalanabis A. K., "Introduction to random signal analysis and Kalman filtering, by R. G. Brown" (Book review), Automatica **22**, 3, pp. 387–388, May, 1986.
Sinha N. K., "Recursive estimation and time-series analysis: an introduction, by P. Young" (Book review), Automatica **22**, 3, p. 388, May, 1986.
Feintuch A., B. A. Francis, "Uniformly optimal control of linear feedback systems (Erratum)" (Other), Automatica **22**, 3, p. 389, May, 1986.

## Volume 22, Issue 4 — July, 1986

Petersen I. R., C. V. Hollot, "A Riccati equation approach to the stabilization of uncertain linear systems" (Regular paper), Automatica **22**, 4, pp. 397–411, July, 1986.
Barmish B. R., A. R. Galimidi, "Robustness of Luenberger observers: linear systems stabilized via non-linear control" (Regular paper), Automatica **22**, 4, pp. 413–423, July, 1986.
Grimble M. J., "Observations weighted controllers for linear stochastic systems" (Regular paper), Automatica **22**, 4, pp. 425–431, July, 1986.
Sebok D. R., S. Richter, R. DeCarlo, "Feedback gain optimization in decentralized eigenvalue assignment" (Regular paper), Automatica **22**, 4, pp. 433–447, July, 1986.
Armentano V. A., "Almost disturbance decoupling by a proportional derivative state feedback law" (Regular paper), Automatica **22**, 4, pp. 449–456, July, 1986.
Tugnait J. K., "Identification of non-minimum phase linear stochastic systems" (Regular paper), Automatica **22**, 4, pp. 457–464, July, 1986.
Watanabe K., "A new forward-pass fixed-interval smoother using the $U - D$ information matrix factorization" (Regular paper), Automatica **22**, 4, pp. 465–475, July, 1986.
Lo J. T.-H., "Optimal estimation for the satellite attitude using star tracker measurements" (Brief paper), Automatica **22**, 4, pp. 477–482, July, 1986.
Stanković S. S., B. D. Kovačević, "Analysis of robust stochastic approximation algorithms for process identification" (Brief paper), Automatica **22**, 4, pp. 483–488, July, 1986.
Ahmed-Zaid S., P. W. Sauer, J. R. Winkelman, "Higher order dynamic equivalents for power systems" (Brief paper), Automatica **22**, 4, pp. 489–494, July, 1986.
Riedle B., L. Praly, P. V. Kokotovic, "Examination of the SPR condition in output error parameter estimation" (Brief paper), Automatica **22**, 4, pp. 495–498, July, 1986.
Nijmeijer H., "Estimation and control of systems, by T. F. Elbert" (Book review), Automatica **22**, 4, pp. 499–500, July, 1986.
Humble S., "Safety systems reliability, by A. E. Green" (Book review), Automatica **22**, 4, p. 500, July, 1986.
Callier F. M., "Control system synthesis: a factorization approach, by M. Vidyasagar" (Book review), Automatica **22**, 4, pp. 500–501, July, 1986.
Luse D. W., "Applied digital control, by J. R. Leigh" (Book review), Automatica **22**, 4, pp. 501–503, July, 1986.

## Volume 22, Issue 5 — September, 1986

Metz D., J. Maddock, "Optimal ride height and pitch control for championship race cars" (Regular paper), Automatica **22**, 5, pp. 509–520, September, 1986.
Song H. K., S. L. Shah, D. G. Fisher, "A self-tuning robust controller" (Regular paper), Automatica **22**, 5, pp. 521–531, September, 1986.
Gutman P.-O., "A linear programming regulator applied to hydroelectric reservoir level control" (Regular paper), Automatica **22**, 5, pp. 533–541, September, 1986.
Gevers M., L. Ljung, "Optimal experiment designs with respect to the intended model application" (Regular paper), Automatica **22**, 5, pp. 543–554, September, 1986.
Johansson R., "Estimation and direct adaptive control of delay-differential systems" (Regular paper), Automatica **22**, 5, pp. 555–560, September, 1986.
Willems J. C., "From time series to linear system — part I. Finite dimensional linear time invariant systems" (Regular paper), Automatica **22**, 5, pp. 561–580, September, 1986.
Fessl J., "An application of multivariable self-tuning regulators to drum boiler control" (Brief paper), Automatica **22**, 5, pp. 581–585, September, 1986.
Palmor Z. J., "Robust digital dead time compensator controller for a class of stable systems" (Brief paper), Automatica **22**, 5, pp. 587–591, September, 1986.
Desai U. B., S. Banerjee, "Reduced-complexity LQR design using canonical correlation analysis" (Brief paper), Automatica **22**, 5, pp. 593–597, September, 1986.
Oshman Y., I. Y. Bar-Itzhack, "Square root filtering via covariance and information eigenfactors" (Brief paper), Automatica **22**, 5, pp. 599–604, September, 1986.
Socha L., "The asymptotic stochastic stability in large of the composite stochastic systems" (Brief paper), Automatica **22**, 5, pp. 605–610, September, 1986.
Jong B. de, "Parametric random vibration, by R. A. Ibrahim" (Book review), Automatica **22**, 5, pp. 611–612, September, 1986.
Nagy I., "Control of electrical drives, by W. Leonhard" (Book review), Automatica **22**, 5, pp. 612–613, September, 1986.
Hills P. C., "Introduction to robots, by A. J. Critchlow" (Book review), Automatica **22**, 5, p. 614, September, 1986.

## Volume 22, Issue 6 — November, 1986

Scattolini R., "A multivariable self-tuning controller with integral action" (Regular paper), Automatica **22**, 6, pp. 619–627, November, 1986.
Boyd S., S. S. Sastry, "Necessary and sufficient conditions for parameter convergence in adaptive control" (Regular paper), Automatica **22**, 6, pp. 629–639, November, 1986.
Mareels I. M. Y., R. R. Bitmead, "Non-linear dynamics in adaptive control: chaotic and periodic stabilization" (Regular paper), Automatica **22**, 6, pp. 641–655, November, 1986.
Kovanic P., "A new theoretical and algorithmical basis for estimation, identification and control" (Regular paper), Automatica **22**, 6, pp. 657–674, November, 1986.
Willems J. C., "From time series to linear system — part II. Exact modelling" (Regular paper), Automatica **22**, 6, pp. 675–694, November, 1986.

Vukobratović M. K., R. D. Stojić, "A decentralized approach to integrated flight control synthesis" (Brief paper), Automatica **22**, 6, pp. 695–704, November, 1986.
Bastin G., D. Dochain, "On-line estimation of microbial specific growth rates" (Brief paper), Automatica **22**, 6, pp. 705–709, November, 1986.
Scott M., "Time/fuel optimal control of constrained linear discrete systems" (Brief paper), Automatica **22**, 6, pp. 711–715, November, 1986.
Anderson B. D. O., E. I. Jury, M. Mansour, "On model reduction of discrete time systems" (Brief paper), Automatica **22**, 6, pp. 717–721, November, 1986.
Yamanaka K., M. Agu, "A higher order approximate model of singularly perturbed systems with white noise" (Brief paper), Automatica **22**, 6, pp. 723–726, November, 1986.
Sunahara Y., S. Aihara, F. Kojima, "A method for parameter estimation of a class of non-linear distributed systems under noisy observations" (Brief paper), Automatica **22**, 6, pp. 727–732, November, 1986.
Doraiswami R., J. Jiang, R. Balasubramanian, "A novel narrow band digital filter and its applications to multivariable system identification" (Brief paper), Automatica **22**, 6, pp. 733–737, November, 1986.
Cavestro W., "Automation, work organization and skills: the case of numerical control" (Brief paper), Automatica **22**, 6, pp. 739–743, November, 1986.
Janiak A., "Time-optimal control in a single machine problem with resource constraints" (Technical Communiqué), Automatica **22**, 6, pp. 745–747, November, 1986.
Ydstie B. E., R. W. H. Sargent, "Convergence and stability properties of an adaptive regulator with variable forgetting factor" (Technical Communiqué), Automatica **22**, 6, pp. 749–751, November, 1986.
Philip G. M., D. F. Watson, "Automatic interpolation methods for mapping piezometric surfaces" (Technical Communiqué), Automatica **22**, 6, pp. 753–756, November, 1986.
Saberi A., P. Sannuti, "Cheap control problem of a linear uniform rank system: design by composite control" (Technical Communiqué), Automatica **22**, 6, pp. 757–759, November, 1986.
Weiss G., "Feedback control: theory and design, by K. J. Kurman" (Book review), Automatica **22**, 6, pp. 761–762, November, 1986.
Başar T., "Introduction to differential games and control theory, by V. N. Lagunov" (Book review), Automatica **22**, 6, pp. 762–763, November, 1986.
Williams S. J., "Applied dynamic and CAD of manipulation robots, by M. Vukobratović and V. Potkonjak" (Book review), Automatica **22**, 6, pp. 763–764, November, 1986.
Kheir N. A., "Feedback control systems, by J. van de Vegte" (Book review), Automatica **22**, 6, p. 765, November, 1986.

## Volume 23, Issue 1 — January, 1987

Axelby G. S., "New address — present procedures" (Editorial), Automatica **23**, 1, p. 1, January, 1987.
Eykhoff P., "Automatica prize paper awards" (Editorial), Automatica **23**, 1, p. 2, January, 1987.
Axelby G. S., P. M. Larsen, "On book reviews — a new editor" (Editorial), Automatica **23**, 1, pp. 2–3, January, 1987.
Larsen P. M., "Announcement IFAC education prize" (Other), Automatica **23**, 1, p. 5, January, 1987.
Hanselmann H., "Implementation of digital controllers — a survey" (Survey paper), Automatica **23**, 1, pp. 7–32, January, 1987.
Petersen I. R., "A procedure for simultaneously stabilizing a collection of single input linear systems using non-linear state feedback control" (Regular paper), Automatica **23**, 1, pp. 33–40, January, 1987.
Kilgour D. M., K. W. Hipel, Liping Fang, "The graph model for conflicts" (Regular paper), Automatica **23**, 1, pp. 41–55, January, 1987.
Goodwin G. C., D. Q. Mayne, "A parameter estimation perspective of continuous time model reference adaptive control" (Regular paper), Automatica **23**, 1, pp. 57–70, January, 1987.
Bender D. J., A. J. Laub, "The linear-quadratic optimal regulator for descriptor systems: discrete-time case" (Regular paper), Automatica **23**, 1, pp. 71–85, January, 1987.
Willems J. C., "From time series to linear systems — Part III. Approximate modelling" (Regular paper), Automatica **23**, 1, pp. 87–115, January, 1987.
Luenberger D. G., "Dynamic equilibria for linear systems and quadratic costs" (Brief paper), Automatica **23**, 1, pp. 117–121, January, 1987.
Morse A. S., "A $4(n+1)$-dimensional model reference adaptive stabilizer for any relative degree one or two, minimum phase system of dimension $n$ or less" (Brief paper), Automatica **23**, 1, pp. 123–125, January, 1987.
Šebek M., "Two-dimensional linear systems, by T. Kaczorek" (Book review), Automatica **23**, 1, pp. 127–128, January, 1987.
Vámos T., "Anticipatory systems, by R. Rosen" (Book review), Automatica **23**, 1, pp. 128–129, January, 1987.
Sinha A., "Real-time dynamics of manipulation robots, by M. Vukobratovic and N. Kircanski" (Book review), Automatica **23**, 1, pp. 129–130, January, 1987.
Jones R. W., "Application of optimal control theory in biomedicine, by G. W. Swan" (Book review), Automatica **23**, 1, pp. 130–131, January, 1987.

## Volume 23, Issue 2 — March, 1987

Clarke D. W., C. Mohtadi, P. S. Tuffs, "Generalized predictive control — Part I. The basic algorithm" (Regular paper), Automatica **23**, 2, pp. 137–148, March, 1987.
Clarke D. W., C. Mohtadi, P. S. Tuffs, "Generalized predictive control — Part II. Extensions and interpretations" (Regular paper), Automatica **23**, 2, pp. 149–160, March, 1987.
Shinohara K., S. Nonaka, "Stability improvement of a current source inverter-induction motor drive system" (Regular paper), Automatica **23**, 2, pp. 161–173, March, 1987.
Candy J. V., J. E. Zicker, "Electromagnetic signal processing: an estimation/identification application" (Regular paper), Automatica **23**, 2, pp. 175–187, March, 1987.
Casalino G., F. Davoli, R. Minciardi, G. Zappa, "On implicit modelling theory: basic concepts and application to adaptive control" (Regular paper), Automatica **23**, 2, pp. 189–201, March, 1987.
Moore J. B., G. Casalino, "On robustness to noise of least squares based adaptive control" (Regular paper), Automatica **23**, 2, pp. 203–208, March, 1987.
Agarwal M., D. E. Seborg, "Self-tuning controllers for nonlinear systems" (Brief paper), Automatica **23**, 2, pp. 209–214, March, 1987.
Wertz V., P. Demeuse, "Application of Clarke-Gawthrop type controllers for the bottom temperature of a glass furnace" (Brief paper), Automatica **23**, 2, pp. 215–220, March, 1987.
Cluett W. R., S. L. Shah, D. G. Fisher, "Robust design of adaptive control systems using conic sector theory" (Brief paper), Automatica **23**, 2, pp. 221–224, March, 1987.
Schwarz P., "A control strategy for a six-pulse bridge converter especially suitable for the use of microcomputers" (Brief paper), Automatica **23**, 2, pp. 225–230, March, 1987.
Rouse W. B., N. M. Morris, "Conceptual design of a human error tolerant interface for complex engineering systems"

(Brief paper), Automatica **23**, 2, pp. 231–235, March, 1987.
Mariton M., "Jump linear quadratic control with random state discontinuities" (Brief paper), Automatica **23**, 2, pp. 237–240, March, 1987.
Rao S. K., Chi-Tsong Chen, "Design of minimal-degree compensators with assignable poles or structure" (Brief paper), Automatica **23**, 2, pp. 241–245, March, 1987.
Lozano-Leal R., R. Ortega, "Reformulation of the parameter identification problem for systems with bounded disturbances" (Brief paper), Automatica **23**, 2, pp. 247–251, March, 1987.
Ortega R., R. Lozano-Leal, "A note on direct adaptive control of systems with bounded disturbances" (Technical Communiqué), Automatica **23**, 2, pp. 253–254, March, 1987.
Zhang Shou-Yuan, "Input-output feedback compensator design" (Technical Communiqué), Automatica **23**, 2, pp. 255–257, March, 1987.
Mosca E., G. Zappa, "On the absence of positive realness conditions in self-tuning regulators based on explicit criterion minimization" (Technical Communiqué), Automatica **23**, 2, pp. 259–260, March, 1987.
Satsangi P. S., "Introduction to system science, by G. M. Sandquist" (Book review), Automatica **23**, 2, pp. 261–262, March, 1987.
Rodd M. G., "Introduction to robotics: mechanics and control, by J. J. Craig" (Book review), Automatica **23**, 2, pp. 263–264, March, 1987.
Taylor P. M., "Handbook of industrial robotics, S. Y. Nof (editor)" (Book review), Automatica **23**, 2, pp. 264–265, March, 1987.
Haimes Y. Y., I. Lefkowitz, "Large-scale control systems, by M. S. Mahmoud, M. F. Hassan and M. G. Darwish" (Book review), Automatica **23**, 2, pp. 265–266, March, 1987.

## Volume 23, Issue 3 — May, 1987

Wang J. C., P. C. Lu, B. C. McInnis, "A microcomputer-based control system for the total artificial heart" (Regular paper), Automatica **23**, 3, pp. 275–286, May, 1987.
Ylinen R., A. J. Niemi, T. Iivarinen, "A linear-quadratic-Gaussian control algorithm for sulphide ore grinding" (Regular paper), Automatica **23**, 3, pp. 287–294, May, 1987.
Downing D. R., W. H. Bryant, "Flight test of a digital controller used in a helicopter autoland system" (Regular paper), Automatica **23**, 3, pp. 295–300, May, 1987.
Fahti Z., W. F. Ramirez, "Optimization of an enhanced oil recovery process with boundary controls — a large-scale non-linear maximization" (Regular paper), Automatica **23**, 3, pp. 301–310, May, 1987.
Fiagbedzi Y. A., A. E. Pearson, "A multistage reduction technique for feedback stabilizing distributed time-lag systems" (Regular paper), Automatica **23**, 3, pp. 311–326, May, 1987.
Grujić Lj. T., Dj. Petkovski, "On robustness of Lurie systems with multiple non-linearities" (Regular paper), Automatica **23**, 3, pp. 327–334, May, 1987.
Mili L., Th. Van Cutsem, M. Ribbens-Pavella, "Decision theory for fault diagnosis in electric power systems" (Regular paper), Automatica **23**, 3, pp. 335–353, May, 1987.
Anderson B. D. O., P. V. Kokotovic, "Optimal control problems over large time intervals" (Regular paper), Automatica **23**, 3, pp. 355–363, May, 1987.
Bourdache-Siguerdidjane H., M. Fliess, "Optimal feedback control of non-linear systems" (Regular paper), Automatica **23**, 3, pp. 365–372, May, 1987.
Spong M. W., J. S. Thorp, J. M. Kleinwaks, "Robust microprocessor control of robot manipulators" (Brief paper), Automatica **23**, 3, pp. 373–379, May, 1987.
Billmann L., R. Isermann, "Leak detection methods for pipelines" (Brief paper), Automatica **23**, 3, pp. 381–385, May, 1987.
Noldus E., "Non-linear model following" (Brief paper), Automatica **23**, 3, pp. 387–391, May, 1987.
Kano H., "Existence condition of positive-definite solutions for algebraic matrix Riccati equations" (Brief paper), Automatica **23**, 3, pp. 393–397, May, 1987.
Hertz D., E. I. Jury, E. Zeheb, "Root exclusion from complex polydomains and some of its applications" (Brief paper), Automatica **23**, 3, pp. 399–404, May, 1987.
Voss G. I., H. J. Chizeck, P. G. Katona, "Regarding self-tuning controllers for nonminimum phase plants" (Technical Communiqué), Automatica **23**, 3, pp. 405–408, May, 1987.
Kahne S., "Feedback control of dynamic systems, by G. F. Franklin, J. D. Powell and A. Emami-Naeini" (Book review), Automatica **23**, 3, p. 413, May, 1987.
Proudfoot C. G., "Principles and practice of automatic process control, by C. A. Smith and A. B. Corripio" (Book review), Automatica **23**, 3, p. 414, May, 1987.
Hill D. J., "Nonlinear control systems: an introduction, by A. Isidori" (Book review), Automatica **23**, 3, pp. 415–416, May, 1987.
Wittenmark B., "Control systems engineering, by S. P. Banks" (Book review), Automatica **23**, 3, p. 417, May, 1987.

## Volume 23, Issue 4 — July, 1987

Glad S. T., "Robustness of nonlinear state feedback — a survey" (Survey paper), Automatica **23**, 4, pp. 425–435, July, 1987.
Auernig J. W., H. Troger, "Time optimal control of overhead cranes with hoisting of the load" (Regular paper), Automatica **23**, 4, pp. 437–447, July, 1987.
Radke F., R. Isermann, "A parameter-adaptive PID-controller with stepwise parameter optimization" (Regular paper), Automatica **23**, 4, pp. 449–457, July, 1987.
Tsakalis K., P. Ioannou, "Adaptive control of linear time-varying plants" (Regular paper), Automatica **23**, 4, pp. 459–468, July, 1987.
Dasgupta S., B. D. O. Anderson, "Physically based parameterizations for designing adaptive algorithms" (Regular paper), Automatica **23**, 4, pp. 469–477, July, 1987.
Basseville M., A. Benveniste, G. Moustakides, A. Rougée, "Detection and diagnosis of changes in the eigenstructure of nonstationary multivariable systems" (Regular paper), Automatica **23**, 4, pp. 479–489, July, 1987.
Jakoby W., M. Pandit, "A prediction-error-method for recursive identification of nonlinear systems" (Regular paper), Automatica **23**, 4, pp. 491–496, July, 1987.
Norton J. P., "Identification and application of bounded-parameter models" (Regular paper), Automatica **23**, 4, pp. 497–507, July, 1987.
Shokoohi S., L. M. Silverman, "Identification and model reduction of time-varying discrete-time systems" (Regular paper), Automatica **23**, 4, pp. 509–521, July, 1987.
Li Shiu, T. Başar, "Distributed algorithms for the computation of noncooperative equilibria" (Regular paper), Automatica **23**, 4, pp. 523–533, July, 1987.
Vidyasagar M., "Some results on simultaneous stabilization with multiple domains of stability" (Brief paper), Automatica **23**, 4, pp. 535–540, July, 1987.
Stoica P., A. Nehorai, "On the uniqueness of prediction error models for systems with noisy input-output data" (Brief paper), Automatica **23**, 4, pp. 541–543, July, 1987.
Willems J. L., "Lineare Kontrolltheorie, by H. W. Knobloch and H. Kwakernaak" (Book review), Automatica **23**, 4, p. 545, July, 1987.

Glad S. T., "Nonlinear system theory, by J. L. Casti" (Book review), Automatica **23**, 4, pp. 545–546, July, 1987.

## Volume 23, Issue 5 — September, 1987

Lumelsky V. J., "Dynamic path planning for a planar articulated robot arm moving amidst unknown obstacles" (Regular paper), Automatica **23**, 5, pp. 551–570, September, 1987.

Sundararajan N., "Experimental evaluation of flexible structure identification using lattice filters" (Regular paper), Automatica **23**, 5, pp. 571–579, September, 1987.

Puente C. E., R. L. Bras, "Error identification and decomposition in large stochastic rainfall-runoff models" (Regular paper), Automatica **23**, 5, pp. 581–588, September, 1987.

Kulhavý R., "Restricted exponential forgetting in real-time identification" (Regular paper), Automatica **23**, 5, pp. 589–600, September, 1987.

Soh Y. C., R. J. Evans, I. R. Petersen, R. E. Betz, "Robust pole assignment" (Regular paper), Automatica **23**, 5, pp. 601–610, September, 1987.

Anderson B. D. O., M. Deistler, "Dynamic errors-in-variable systems with three variables" (Regular paper), Automatica **23**, 5, pp. 611–616, September, 1987.

Georgiou T. T., A. M. Pascoal, P. P. Khargonekar, "On the robust stabilizability of uncertain linear time-invariant plants using nonlinear time-varying controllers" (Regular paper), Automatica **23**, 5, pp. 617–624, September, 1987.

Ma C. C. H., M. Vidyasagar, "Parametric conditions for stability of reduced-order linear time-varying control systems" (Regular paper), Automatica **23**, 5, pp. 625–634, September, 1987.

Misra P., R. V. Patel, "Computation of transfer function matrices of linear multivariable systems" (Brief paper), Automatica **23**, 5, pp. 635–640, September, 1987.

Moore J. B., D. L. Mingori, "Robust frequency-shaped LQ control" (Brief paper), Automatica **23**, 5, pp. 641–646, September, 1987.

Feliu V., J. Avello, "Matrix factorization method to stabilize multivariable control systems" (Brief paper), Automatica **23**, 5, pp. 647–651, September, 1987.

Saberi A., "Simultaneous stabilization with almost disturbance decoupling-uniform rank system" (Brief paper), Automatica **23**, 5, pp. 653–656, September, 1987.

Curtain R. F., P. Kotelenez, "Stochastic models for uncertain flexible systems" (Brief paper), Automatica **23**, 5, pp. 657–661, September, 1987.

Rasmussen J., L. P. Goodstein, "decision support in supervisory control of high-risk industrial systems" (Brief paper), Automatica **23**, 5, pp. 663–671, September, 1987.

Sebok D. R., R. DeCarlo, "On the controllability of the parameterized state matrix in 'A continuation approach to eigenvalue assignment' by Harris, DeCarlo and Richter" (Technical Communiqué), Automatica **23**, 5, pp. 673–674, September, 1987.

Schmitendorf W. E., "Methods for obtaining robust tracking control laws" (Technical Communiqué), Automatica **23**, 5, pp. 675–677, September, 1987.

Collins W. D., "Singular perturbation analysis of discrete control systems, by D. S. Naidu and A. K. Rao" (Book review), Automatica **23**, 5, pp. 679–680, September, 1987.

Valavanis K. P., "Non-adaptive and adaptive control of manipulation robots, by M. Vukobratovic, D. Stokic and N. Kircanski" (Book review), Automatica **23**, 5, pp. 680–681, September, 1987.

Benveniste A., "Commande adaptive aspects pratiques et théoriques, I. D. Landau and L. Dugard (editors)" (Book review), Automatica **23**, 5, pp. 681–682, September, 1987.

Cook P. A., "Nonlinear oscillations in feedback systems, by V. Biró" (Book review), Automatica **23**, 5, pp. 682–683, September, 1987.

## Volume 23, Issue 6 — November, 1987

Johnson A., "The control of fed-batch fermentation processes — a survey" (Survey paper), Automatica **23**, 6, pp. 691–705, November, 1987.

Vajda S., P. Valkó, K. R. Godfrey, "Direct and indirect least squares methods in continuous-time parameter estimation" (Regular paper), Automatica **23**, 6, pp. 707–718, November, 1987.

Pohjolainen S., "On the optimal tuning of a robust controller for parabolic distributed parameter systems" (Regular paper), Automatica **23**, 6, pp. 719–728, November, 1987.

Hanus R., M. Kinnaert, J.-L. Henrotte, "Condition technique, a general anti-windup and bumpless transfer method" (Regular paper), Automatica **23**, 6, pp. 729–739, November, 1987.

Kadiman K., D. Williamson, "Discrete minimax linear quadratic regulation of continuous-time systems" (Brief paper), Automatica **23**, 6, pp. 741–747, November, 1987.

Sen S., S. J. Yakowitz, "A quasi-Newton differential dynamic programming algorithm for discrete-time optimal control" (Brief paper), Automatica **23**, 6, pp. 749–752, November, 1987.

Orlov Yu. V., V. I. Utkin, "Sliding mode control in indefinite-dimensional systems" (Brief paper), Automatica **23**, 6, pp. 753–757, November, 1987.

Fiagbedzi Y. A., A. E. Pearson, "A PI-controller for distributed delay systems" (Brief paper), Automatica **23**, 6, pp. 759–762, November, 1987.

Fujinaka T., M. Araki, "Discrete-time optimal control of systems with unilateral time-delays" (Brief paper), Automatica **23**, 6, pp. 763–765, November, 1987.

Wittenmark B., R. J. Evans, Y. C. Soh, "Constrained pole-placement using transformation and LQ-design" (Brief paper), Automatica **23**, 6, pp. 767–769, November, 1987.

Doraiswami R., "Measures of overshoot, speed of response and robustness" (Brief paper), Automatica **23**, 6, pp. 771–774, November, 1987.

Kitanidis P. K., "Unbiased minimum-invariance linear state estimation" (Brief paper), Automatica **23**, 6, pp. 775–778, November, 1987.

Fuchs J.-J., "On estimating the order of an ARMA process" (Brief paper), Automatica **23**, 6, pp. 779–782, November, 1987.

Mariton M., "Stochastic controllability of linear systems with Markovian jumps" (Brief paper), Automatica **23**, 6, pp. 783–785, November, 1987.

Yamanaka K., E. Shimemura, "Effects of mismatched Smith controller on stability in systems with time-delay" (Brief paper), Automatica **23**, 6, pp. 787–791, November, 1987.

Middleton R. H., "Indirect continuous time adaptive control" (Technical Communiqué), Automatica **23**, 6, pp. 793–795, November, 1987.

Scattolini R., N. Schiavoni, "Generalized minimum variance control of MIMO systems - a stability result" (Technical Communiqué), Automatica **23**, 6, pp. 797–799, November, 1987.

Kümmel M., D. Seborg, "A contemplative stance for chemical process control" (Correspondence item), Automatica **23**, 6, pp. 801–802, November, 1987.

Hindi K. S., "Control systems design: an introduction to state-space methods, by B. Friedland" (Book review), Automatica **23**, 6, pp. 803–804, November, 1987.

Wozniak L., "Modern control systems: a manual of design methods, by J. A. Borrie" (Book review), Automatica **23**, 6,

pp. 804–805, November, 1987.
Amerongen J. van, "Control systems modeling and analysis, by G. Voland" (Book review), Automatica **23**, 6, pp. 805–807, November, 1987.
Kraft D., "Optimal estimation with an introduction to stochastic control theory, by F. L. Lewis" (Book review), Automatica **23**, 6, pp. 807–808, November, 1987.

## Volume 24, Issue 1 — January, 1988

Eykhoff P., "Announcement Automatica prize paper awards — 1987" (Editorial), Automatica **24**, 1, pp. 1–2, January, 1988.
Goh C. J., K. L. Teo, "Control parametrization: a unified approach to optimal control problems with general constraints" (Regular paper), Automatica **24**, 1, pp. 3–18, January, 1988.
Omatu S., J. H. Seinfeld, T. Soeda, Y. Sawaragi, "Estimation of nitrogen dioxide concentrations in the vicinity of a roadway by optimal filtering theory" (Regular paper), Automatica **24**, 1, pp. 19–29, January, 1988.
Marino R., P. V. Kokotovic, "A geometric approach to nonlinear singularly perturbed control systems" (Regular paper), Automatica **24**, 1, pp. 31–41, January, 1988.
Halevi Y., Z. J. Palmor, "Admissible MIMO singular observation LQG designs" (Regular paper), Automatica **24**, 1, pp. 43–51, January, 1988.
Haimes Y. Y., Duan Li, "Hierarchical multiobjective analysis for large-scale systems: review and current status" (Regular paper), Automatica **24**, 1, pp. 53–69, January, 1988.
Moon Y. H., Y. M. Park, K. J. Lee, "Observable island identification for state estimation using incidence matrix" (Brief paper), Automatica **24**, 1, pp. 71–75, January, 1988.
Koning W. L. de, "Stationary optimal control of stochastically sampled continuous-time systems" (Brief paper), Automatica **24**, 1, pp. 77–79, January, 1988.
Remy P. A., A. H. Levis, V. Y.-Y. Jin, "On the design of distributed organizational structures" (Brief paper), Automatica **24**, 1, pp. 81–86, January, 1988.
Cooke R., M. Mendel, W. Thijs, "Calibration and information in expert resolution: a classical approach" (Brief paper), Automatica **24**, 1, pp. 87–94, January, 1988.
Tarn Tzyh-Jong, J. R. Zavgren, Jr., Xiaoming Zeng, "Stabilization of infinite-dimensional systems with periodic feedback gains and sampled output" (Brief paper), Automatica **24**, 1, pp. 95–99, January, 1988.
Saberi A., "On optimality of decentralized control for a class of nonlinear interconnected systems" (Brief paper), Automatica **24**, 1, pp. 101–104, January, 1988.
Khorasani K., "An optimal feedback regulation of nonlinear singularly perturbed systems via slow manifold approach" (Brief paper), Automatica **24**, 1, pp. 105–108, January, 1988.
Kučera V., J. V. Outrata, "Optimal control, by F. L. Lewis" (Book review), Automatica **24**, 1, pp. 109–110, January, 1988.
Banks S., "Control systems engineering, by W. J. Palm" (Book review), Automatica **24**, 1, p. 110, January, 1988.
Goodwin G., "Control system principles and design, by E. O. Doebelin" (Book review), Automatica **24**, 1, pp. 111–112, January, 1988.
Vámos T., "Competent expert systems: a case study in fault diagnosis, by E. T. Keravnou and L. Johnson" (Book review), Automatica **24**, 1, pp. 112–113, January, 1988.
Beyens J., "Modern control theory (second edition), by W. L. Brogan" (Book review), Automatica **24**, 1, pp. 113–114, January, 1988.
Unbehauen H., "Engineering applications of microcomputers: instrumentation and control, by R. Ball and R. Pratt" (Book review), Automatica **24**, 1, pp. 114–115, January, 1988.

## Volume 24, Issue 2 — March, 1988

Saridis G. N., K. P. Valavanis, "Analytical design of intelligent machines" (Regular paper), Automatica **24**, 2, pp. 123–133, March, 1988.
Nielsen L., "Automated guidance of vehicles using vision and projective invariant marking" (Regular paper), Automatica **24**, 2, pp. 135–148, March, 1988.
De Keyser R. M. C., Ph. G. A. Van de Velde, F. A. G. Dumortier, "A comparative study of self-adaptive long-range predictive control methods" (Regular paper), Automatica **24**, 2, pp. 149–163, March, 1988.
Zervos C., P. R. Bélanger, G. A. Dumont, "In PID controller tuning using orthonormal series identification" (Regular paper), Automatica **24**, 2, pp. 165–175, March, 1988.
Bontsema J., R. F. Curtain, J. M. Schumacher, "Robust control of flexible structures: a case study" (Regular paper), Automatica **24**, 2, pp. 177–186, March, 1988.
Matthews G. P., R. A. DeCarlo, "Decentralized tracking for a class of interconnected nonlinear systems using variable structure control" (Regular paper), Automatica **24**, 2, pp. 187–193, March, 1988.
Shinar J., "State-dependent optimality of a singular subarc" (Regular paper), Automatica **24**, 2, pp. 195–201, March, 1988.
Ohsumi A., "Linear estimation of random fields with second-order increments and its application" (Regular paper), Automatica **24**, 2, pp. 203–215, March, 1988.
Dasgupta S., B. D. O. Anderson, R. J. Kaye, "Identification of physical parameters in structured systems" (Regular paper), Automatica **24**, 2, pp. 217–225, March, 1988.
Rouse W. B., W. J. Cody, "On the design of man-machine systems: principles, practices and prospects" (Regular paper), Automatica **24**, 2, pp. 227–238, March, 1988.
Bingulac S., J. H. Chow, J. R. Winkelman, "Simultaneous generation of sensitivity functions — transfer function matrix approach" (Brief paper), Automatica **24**, 2, pp. 239–242, March, 1988.
Jacobs O. L. R., "Gaussian approximation in recursive estimation of multiple states of nonlinear Wiener systems" (Brief paper), Automatica **24**, 2, pp. 243–247, March, 1988.
Soliman S. A., G. S. Christensen, "Optimization of hydropower systems operation with a quadratic model" (Brief paper), Automatica **24**, 2, pp. 249–256, March, 1988.
Stojić M. R., M. M. Fedenia, R. M. Stojić, "Sensitivities of the prescribed pole spectrum in a closed-loop control system" (Brief paper), Automatica **24**, 2, pp. 257–260, March, 1988.
Nett C. N., J. A. Uthgenannt, "An explicit formula and an optimal weight for the 2-block structured singular value interaction measure" (Brief paper), Automatica **24**, 2, pp. 261–265, March, 1988.
Lindner D. K., W. R. Perkins, "The generalized Hessenberg representation and near aggregation" (Brief paper), Automatica **24**, 2, pp. 267–270, March, 1988.
Wittenmark B., P.-O. Olsson, "Identification based on data with sampling delays" (Technical Communiqué), Automatica **24**, 2, pp. 271–273, March, 1988.
Palmor Z. J., Y. Halevi, "On the recovery procedure for LQG systems" (Technical Communiqué), Automatica **24**, 2, pp. 275–277, March, 1988.
Shayman M. A., "Pole placement by dynamic compensation for descriptor systems" (Technical Communiqué), Automatica **24**, 2, pp. 279–282, March, 1988.
Baran R. H., "Comments on 'A new theoretical and algorithmical basis for estimation, identification and control' by P. Kovanic" (Technical Communiqué), Automatica **24**, 2, pp. 283–287, March, 1988.
Hills P., "Robot analysis and control, by H. Asada and J.-J. E. Slotine" (Book review), Automatica **24**, 2, p. 289, March,

1988.
Dorato P., "Adaptive and learning systems: theory and applications, K. S. Narenda (editor)" (Book review), Automatica **24**, 2, pp. 290–291, March, 1988.
Sebestyen B., "Microcomputer bus structures and bus interface design, by A. L. Dexter" (Book review), Automatica **24**, 2, pp. 291–292, March, 1988.
Petersen D., "Real-time interfacing: engineering aspects of microprocessor peripheral systems, by J. E. Cooling" (Book review), Automatica **24**, 2, pp. 292–293, March, 1988.
Rodd M. G., "Distributed control systems — their evaluation and design, by M. P. Lukas" (Book review), Automatica **24**, 2, pp. 294–295, March, 1988.

## Volume 24, Issue 3 — May, 1988

Axelby G. S., "Multiple anniversaries" (Editorial), Automatica **24**, 3, pp. 305–306, May, 1988.
Basseville M., "Detecting changes in signals and systems — a survey" (Survey paper), Automatica **24**, 3, pp. 309–326, May, 1988.
De Souza C. E., G. C. Goodwin, D. Q. Mayne, M. Palaniswami, "An adaptive control algorithm for linear systems having unknown time delay" (Regular paper), Automatica **24**, 3, pp. 327–341, May, 1988.
Miminis G. S., C. C. Paige, "A direct algorithm for pole assignment of time-invariant multi-input linear systems using state feedback" (Regular paper), Automatica **24**, 3, pp. 343–356, May, 1988.
Bayard D. S., F. Y. Hadaegh, D. R. Meldrum, "Optimal experiment design for identification of large space structures" (Regular paper), Automatica **24**, 3, pp. 357–364, May, 1988.
Eldem V., N. Yildizbayrak, "Parameter and structure identification of linear multivariable systems" (Regular paper), Automatica **24**, 3, pp. 365–373, May, 1988.
Grasselli O. M., S. Longhi, "Disturbance localization by measurement feedback for linear periodic discrete-time systems" (Regular paper), Automatica **24**, 3, pp. 375–385, May, 1988.
Grizzle J. W., M. H. Shor, "Sampling, infinite zeros and decoupling of linear systems" (Regular paper), Automatica **24**, 3, pp. 387–396, May, 1988.
Hodge S. E., D.B. Cherchas, "Closed-loop discrete-time control of a hinged wavemaker" (Brief paper), Automatica **24**, 3, pp. 397–404, May, 1988.
Castro J. C., M. Ó. Catão, R. Doraiswami, "Identification of the generating units to be equipped with stabilizers in a multimachine power system" (Brief paper), Automatica **24**, 3, pp. 405–409, May, 1988.
Sugisaka M., R. Fischl, P. Herczfeld, P. Kalata, C. Rorres' "Filtering algorithm for estimating fluid temperature profile in solar collectors" (Brief paper), Automatica **24**, 3, pp. 411–414, May, 1988.
Tharp H. S., J. V. Medanic, W. R. Perkins, "Parameterization of frequency weighting for a two-stage linear quadratic regulator based design" (Brief paper), Automatica **24**, 3, pp. 415–418, May, 1988.
Reed J. S., P. A. Ioannou, "Discrete-time decentralized adaptive control" (Brief paper), Automatica **24**, 3, pp. 419–421, May, 1988.
Rajagopalan T., K. K. Appukuttan, "Pole assignment with constraints using output feedback" (Technical Communiqué), Automatica **24**, 3, pp. 423–424, May, 1988.
De La Salle S., "Stochastic optimal control theory and application, by R. F. Stengel" (Book review), Automatica **24**, 3, pp. 425–426, May, 1988.
Stoica P., "An introduction to identification, by J. P. Norton" (Book review), Automatica **24**, 3, pp. 426–427, May, 1988.
Mahood W. L., "Natural language processing; a knowledge-engineering approach, by R. E. Cullingford" (Book review), Automatica **24**, 3, pp. 428–429, May, 1988.

## Volume 24, Issue 4 — July, 1988

Aubrun J.-N., K. R. Lorell, T. W. Havas, W. C. Henninger, "Performance analysis of the segment alignment control system for the ten-meter telescope" (Regular paper), Automatica **24**, 4, pp. 437–453, July, 1988.
Marqués D., M. Morari, "On-line optimization of gas pipeline networks" (Regular paper), Automatica **24**, 4, pp. 455–469, July, 1988.
Lane S. H., R. F. Stengel, "Flight control using non-linear inverse dynamics" (Regular paper), Automatica **24**, 4, pp. 471–483, July, 1988.
Mareels I. M. Y., R. R. Bitmead, "Non-linear dynamics in adaptive control: periodic and chaotic stabilization — II. Analysis" (Regular paper), Automatica **24**, 4, pp. 485–497, July, 1988.
Vlassenbroeck J., "A Chebyshev polynomial method for optimal control with state constraints" (Regular paper), Automatica **24**, 4, pp. 499–506, July, 1988.
King A. M., U. B. Desai, R. E. Skelton, "A generalized approach to $q-$ Markov covariance equivalent realizations for discrete systems" (Regular paper), Automatica **24**, 4, pp. 507–515, July, 1988.
Gibson J. S., I. G. Rosen, "Approximation of discrete-time LQG compensators for distributed systems with boundary input and unbounded measurement" (Regular paper), Automatica **24**, 4, pp. 517–529, July, 1988.
Kunisch K., "A review of some recent results on the output least squares formulation of parameter estimation problems" (Regular paper), Automatica **24**, 4, pp. 531–539, July, 1988.
Rovner D. M., G. F. Franklin, "Experiments in load-adaptive control of a very flexible one-link manipulator" (Brief paper), Automatica **24**, 4, pp. 541–548, July, 1988.
Bellini A., G. Figalli, G. Ulivi, "Analysis and design of a microcomputer-based observer for an induction machine" (Brief paper), Automatica **24**, 4, pp. 549–555, July, 1988.
Sternad M., T. Söderström, "LQG-optimal feedforward regulators" (Brief paper), Automatica **24**, 4, pp. 557–561, July, 1988.
Sams A. D., V. Z. Marmarelis, "Identification of linear periodically time-varying systems using white-noise test inputs" (Brief paper), Automatica **24**, 4, pp. 563–567, July, 1988.
Whiting R. G., E. E. Pickett, "On model order estimation for partially observed Markov chains" (Brief paper), Automatica **24**, 4, pp. 569–572, July, 1988.
Ljung L., "Control theory 1984–1986. A progress report from IFAC's technical committee on theory" (IFAC report), Automatica **24**, 4, pp. 573–583, July, 1988.
Humble S., "Cybernetics: a new management tool, by B. Clemson" (Book review), Automatica **24**, 4, p. 585, July, 1988.
Bell D., "Algebraic and geometric methods in nonlinear control theory, M. Fliess and M. Hazewinkel (editors)" (Book review), Automatica **24**, 4, pp. 586–587, July, 1988.
Vamos T., "Automation production systems and computer integrated manufacturing, by M. P. Groover" (Book review), Automatica **24**, 4, p. 587, July, 1988.

## Volume 24, Issue 5 — September, 1988

Rousseaux P., D. Mallieu, Th. Van Cutsem, M. Ribbens-Pavella, "Dynamic state prediction and hierarchical filtering for power system state estimation" (Regular paper), Automatica **24**, 5, pp. 595–618, September,

1988.
Burke S. E., J. E. Hubbard, Jr., "Distributed actuator control design for flexible beams" (Regular paper), Automatica **24**, 5, pp. 619–627, September, 1988.
Diaz H., A. A. Desrochers, "Modeling of nonlinear discrete-time systems from input-output data" (Regular paper), Automatica **24**, 5, pp. 629–641, September, 1988.
Wei Kehui, B. R. Barmish, "An iterative design procedure for simultaneous stabilization of MIMO systems" (Regular paper), Automatica **24**, 5, pp. 643–652, September, 1988.
Kučera V., P. Zagalak, "Fundamental theorem of state feedback for singular systems" (Regular paper), Automatica **24**, 5, pp. 653–658, September, 1988.
Sangsuk-Iam S., T. E. Bullock, "Analysis of continuous-time Kalman filtering under incorrect noise covariances" (Regular paper), Automatica **24**, 5, pp. 659–669, September, 1988.
Kher L. K., S. Sorooshian, "A predictive demand model for systems planning, using noise realization theory" (Brief paper), Automatica **24**, 5, pp. 671–676, September, 1988.
Davidson J., J. L. Houle, "Mathematical model for simulation of hierarchically distributed process control computer systems" (Brief paper), Automatica **24**, 5, pp. 677–686, September, 1988.
Tsui Chia-Chi, "On robust observer compensator design" (Brief paper), Automatica **24**, 5, pp. 687–692, September, 1988.
Schmitendorf W. E., "Design of observer-based robust stabilizing controllers" (Brief paper), Automatica **24**, 5, pp. 693–696, September, 1988.
Ishihara T., "Robust stability bounds for a class of discrete-time regulators with computation delays" (Brief paper), Automatica **24**, 5, pp. 697–700, September, 1988.
Tsai Mi-Ching, Yen-Ping Shih, "Balanced minimal realization via singular value decomposition of Sarazon operator" (Brief paper), Automatica **24**, 5, pp. 701–705, September, 1988.
Zhaolin Cheng, Hong Huimin, Zhang Jifeng, "The optimal regulation of generalized state-space systems with quadratic cost" (Brief paper), Automatica **24**, 5, pp. 707–710, September, 1988.
Šebek M., "Asymptotic tracking for 2-D and delay-differential systems" (Brief paper), Automatica **24**, 5, pp. 711–713, September, 1988.
Baram Y., U. Shaked, "On the internal structure of minimal stochastic realizations" (Technical Communiqué), Automatica **24**, 5, pp. 715–717, September, 1988.
Linnemann A., "Existence of controllers stabilizing the reduced-order model and not the plant" (Technical Communiqué), Automatica **24**, 5, p. 719, September, 1988.
Clarke D. W., "Introduction to random processes with applications to signals and systems, by W. A. Gardner" (Book review), Automatica **24**, 5, pp. 721–722, September, 1988.
Papavissilopoulos G., "Team theory, by K. H. Kim and F. W. Roush" (Book review), Automatica **24**, 5, pp. 722–723, September, 1988.
Schuppen J. H. van, "Detection of abrupt changes in signals and dynamical systems; lecture notes in control and information sciences, volume 77, M. Basseville and A. Benveniste (editors)" (Book review), Automatica **24**, 5, pp. 723–724, September, 1988.
Curtain R. F., "Systeme mit örtlich verteilten Parametern — eine Einführung in die Modellbildung, Analyse und Regelung, by D. Franke" (Book review), Automatica **24**, 5, pp. 725–726, September, 1988.
Rodd M. G., F. Deravi, "Image recovery — theory and applications, H. Stark (editor)" (Book review), Automatica **24**, 5, pp. 726–727, September, 1988.

## Volume 24, Issue 6 — November, 1988

Well K. H., "Obituary Henry J. Kelley" (Editorial), Automatica **24**, 6, pp. 737–738, November, 1988.
Kwakernaak H., "Obituary A. K. Mahalanabis" (Other), Automatica **24**, 6, p. 739, November, 1988.
Hoshino I., Y. Maekawa, T. Fujimoto, Hiroshi Kimura, Hidenori Kimura' "Observer-based multivariable control of the aluminum cold tandem mill" (Regular paper), Automatica **24**, 6, pp. 741–754, November, 1988.
Heck B. S., A. H. Haddad, "Singular perturbation analysis of linear systems with scalar quantized control" (Regular paper), Automatica **24**, 6, pp. 755–764, November, 1988.
Fujita M., E. Shimemura, "Integrity against arbitrary feedback-loop failure in linear multivariable control systems" (Regular paper), Automatica **24**, 6, pp. 765–772, November, 1988.
Uchida K., E. Shimemura, T. Kubo, N. Abe, "The linear-quadratic optimal control approach to feedback control design for systems with delay" (Regular paper), Automatica **24**, 6, pp. 773–780, November, 1988.
Lee T.-H., K. S. Narendra, "Robust adaptive control of discrete-time systems using persistent excitation" (Regular paper), Automatica **24**, 6, pp. 781–788, November, 1988.
Kramer S. C., H. W. Sorenson, "Recursive Bayesian estimation using piece-wise constant approximations" (Regular paper), Automatica **24**, 6, pp. 789–801, November, 1988.
Bos A. van den, "Nonlinear least-absolute-values and minimax model fitting" (Regular paper), Automatica **24**, 6, pp. 803–808, November, 1988.
Grimble M. J., "Two-degrees of freedom feedback and feedforward optimal control of multivariable stochastic systems" (Brief paper), Automatica **24**, 6, pp. 809–817, November, 1988.
Shieh L. S., H. M. Dib, S. Ganesan, "Linear quadratic regulators with eigenvalue placement in a specified region" (Brief paper), Automatica **24**, 6, pp. 819–823, November, 1988.
Le L. X., W. J. Wilson, "Bias reduction in parameter estimation" (Brief paper), Automatica **24**, 6, pp. 825–828, November, 1988.
Meyer D. G., "Annihilator structure of a principal ideal: relation to optimal compensators" (Brief paper), Automatica **24**, 6, pp. 829–833, November, 1988.
Mills J. K., A. A. Goldenberg, "Global connective stability of a class of robotic manipulators" (Brief paper), Automatica **24**, 6, pp. 835–839, November, 1988.
Kowalski A., D. Szynal, "On state estimation and control in discrete-time systems of linear type" (Technical Communiqué), Automatica **24**, 6, pp. 841–843, November, 1988.
Haimes Y. Y., "System and control encyclopedia, M. G. Singh (editor)" (Book review), Automatica **24**, 6, pp. 845–847, November, 1988.
Weber W., "Supercomputer architecture, by P. B. Schneck" (Book review), Automatica **24**, 6, pp. 847–848, November, 1988.
Glad T., "Automatic control systems (fifth edition), by B. C. Kuo" (Book review), Automatica **24**, 6, pp. 849–850, November, 1988.

## Volume 25, Issue 1 — January, 1989

Hang C. C., K. W. Lim, B. W. Chong, "A dual-rate adaptive digital Smith predictor" (Regular paper), Automatica **25**, 1, pp. 1–16, January, 1989.
Hall S. A., "Real-time control of a nonlinear electromagnetic actuator" (Regular paper), Automatica **25**, 1, pp. 17–31, January, 1989.

Dumont G. A., J. M. Martin-Sanchez, C. C. Zervos, "Comparison of an auto-tuned PID regulator and an adaptive predictive control system on an industrial beach plant" (Regular paper), Automatica **25**, 1, pp. 33–40, January, 1989.

Grimble M. J., S. De La Salle, D. Ho, "Relationship between internal model control and LQG controller structures" (Regular paper), Automatica **25**, 1, pp. 41–53, January, 1989.

Ghosh D., C. H. Knapp, "Measurement selection for linear multivariable control systems" (Regular paper), Automatica **25**, 1, pp. 55–63, January, 1989.

Khalil H. K., Y.-N. Hu, "Steering control of singularly perturbed systems: a composite control approach" (Regular paper), Automatica **25**, 1, pp. 65–75, January, 1989.

Chang Shi-Chung, Tsu-Shuan Chang, P. B. Luh, "A hierarchical decomposition for large-scale optimal control problems with parallel processing structure" (Regular paper), Automatica **25**, 1, pp. 77–86, January, 1989.

Deistler M., M. Gevers, "Properties of the parametrization of monic ARMA systems" (Regular paper), Automatica **25**, 1, pp. 87–95, January, 1989.

Parlar M., "Solving dynamic optimization problems on a personal computer using an electronic spreadsheet" (Brief paper), Automatica **25**, 1, pp. 97–101, January, 1989.

Begovich O., R. Ortega, "Adaptive head control of a hydraulic open channel mode" (Brief paper), Automatica **25**, 1, pp. 103–107, January, 1989.

Vicino A., "Robustness of pole location in perturbed systems" (Brief paper), Automatica **25**, 1, pp. 109–113, January, 1989.

Soh Y. C., R. J. Evans, "Characterization of robust controllers" (Brief paper), Automatica **25**, 1, pp. 115–117, January, 1989.

Skogestad S., M. Morari, "Robust performance of decentralized control systems by independent designs" (Brief paper), Automatica **25**, 1, pp. 119–125, January, 1989.

Willems J. L., "Time-varying feedback for the stabilization of fixed modes in decentralized control systems" (Brief paper), Automatica **25**, 1, pp. 127–131, January, 1989.

Ulm M., H.-D. Wend, "A concept for parameter independent evaluation of decentralized stabilizability" (Brief paper), Automatica **25**, 1, pp. 133–136, January, 1989.

Calvet J. L., A. Titli, "Overlapping vs partitioning in block-iteration methods: application in large-scale system theory" (Brief paper), Automatica **25**, 1, pp. 137–145, January, 1989.

Guo Lei, Han-Fu Chen, Ji-Feng Zhang, "Consistent order estimation for linear stochastic feedback control systems (CARMA model)" (Brief paper), Automatica **25**, 1, pp. 147–151, January, 1989.

Kwong R. H., T. J. Richardson, "Comments on: 'Existence conditions of positive-definite solutions for algebraic matrix Riccati equations"' (Technical Communiqué), Automatica **25**, 1, p. 153, January, 1989.

Parks P. C., "Stability of adaptive systems: passivity and averaging analysis, by B. D. O. Anderson, R. R. Bitmead, C. R. Johnson Jr., *et al.*" (Book review), Automatica **25**, 1, pp. 155–156, January, 1989.

Sage A. P., "Linear control systems — a computer-aided approach, by M. Jamshidi and M. Malek-Zavarei" (Book review), Automatica **25**, 1, pp. 156–157, January, 1989.

## Volume 25, Issue 2 — March, 1989

MacFarlane A. G. J., G. Gruebel, J. Ackermann, "Future design environments for control engineering" (Regular paper), Automatica **25**, 2, pp. 165–176, March, 1989.

Papageorgiou M., A. Messmer, "Flow control of a long river stretch" (Regular paper), Automatica **25**, 2, pp. 177–183, March, 1989.

Nakamori Y., "Development and application of an interactive modeling support system" (Regular paper), Automatica **25**, 2, pp. 185–206, March, 1989.

Pau L., "Knowledge representation approaches in sensor fusion" (Regular paper), Automatica **25**, 2, pp. 207–214, March, 1989.

Gu M. C., I. Postlethwaite, "An algorithm for super-optimal $H^{\infty}$ design: the two-block case" (Regular paper), Automatica **25**, 2, pp. 215–221, March, 1989.

Menaldi J. L., M. I. Taksar, "Optimal correction problem of a multidimensional stochastic system" (Regular paper), Automatica **25**, 2, pp. 223–232, March, 1989.

Tatjewski P., "New dual-type decomposition algorithm for nonconvex separable optimization problems" (Regular paper), Automatica **25**, 2, pp. 233–242, March, 1989.

Yi G., Y. B. Hwang, H. N. Chang, K. S. Lee, "Computer control of cell mass concentration in continuous culture" (Brief paper), Automatica **25**, 2, pp. 243–249, March, 1989.

Baoping Guo, Hu Baosheng, "The application and expansion of the input-output consumption-tracking control model" (Brief paper), Automatica **25**, 2, pp. 251–257, March, 1989.

Roppenecker G., J. O'Reilly, "Parametric output feedback controller design" (Brief paper), Automatica **25**, 2, pp. 259–265, March, 1989.

Vaz A. F., E. J. Davison, "The structured robust decentralized servomechanism problem for interconnected systems" (Brief paper), Automatica **25**, 2, pp. 267–272, March, 1989.

Maršik J., V. Strejc, "Application of identification-free algorithms for adaptive control" (Brief paper), Automatica **25**, 2, pp. 273–277, March, 1989.

Engwerda J. C., P. W. Otter, "On the choice of weighting matrices in the minimum variance controller" (Brief paper), Automatica **25**, 2, pp. 279–285, March, 1989.

Ioannou P. A., Gang Tao, "Dominant richness and improvement of performance of robust adaptive control" (Brief paper), Automatica **25**, 2, pp. 287–291, March, 1989.

Geromel J. C., "Global optimization of measurement strategies for linear stochastic systems" (Brief paper), Automatica **25**, 2, pp. 293–300, March, 1989.

Khorasani K., "A slow manifold approach to linear equivalents of nonlinear singularly perturbed systems" (Brief paper), Automatica **25**, 2, pp. 301–306, March, 1989.

Kambhampati C., J. E. Ellis, P. D. Roberts, "Generalization of integrated system optimization and parameter estimation techniques" (Brief paper), Automatica **25**, 2, pp. 307–310, March, 1989.

Barker H. A., M. Chen, P. W. Grant, C. P. Jobling, P. Townsend' "A man-machine interface for computer-aided design and simulation of control systems" (Brief paper), Automatica **25**, 2, pp. 311–316, March, 1989.

Young G. E., X. J. Tao, "A short-cut to the Mobius transformation with a recursive algorithm" (Technical Communiqué), Automatica **25**, 2, pp. 317–319, March, 1989.

Ehrenberger W., "Reliability of computers and control systems, by N. Viswanadham, V. V. S. Sarma and M. G. Singh" (Book review), Automatica **25**, 2, p. 321, March, 1989.

Kučera V., "Control system design: conventional, algebraic and optimal methods, by Chi-Tsong Chen" (Book review), Automatica **25**, 2, pp. 322–323, March, 1989.

Schmidtbauer B., "Microprocessor-based control systems, by N. K. Sinha" (Book review), Automatica **25**, 2, pp. 323–324, March, 1989.

## Volume 25, Issue 3 — May, 1989

Axelby G. S., P. C. Parks, "Two golden jubilees" (Editorial), Automatica **25**, 3, p. 333, May, 1989.

García C. E., D. M. Prett, M. Morari, "Model predictive

control: theory and practice - a survey" (Survey paper), Automatica **25**, 3, pp. 335–348, May, 1989.
Weingaertner S. T., A. H. Levis, "Analysis of decision aiding in submarine emergency decisionmaking" (Regular paper), Automatica **25**, 3, pp. 349–358, May, 1989.
Chang K. C., Y. Bar-Shalom, "Distributed adaptive estimation with probabilistic data association" (Regular paper), Automatica **25**, 3, pp. 359–369, May, 1989.
Barmish B. R., Zhicheng Shi, "Robust stability of perturbed systems with time delays" (Regular paper), Automatica **25**, 3, pp. 371–381, May, 1989.
Pronzato L., E. Walter, "Experiment design in a bounded-error context: comparison with *D*-optimality" (Regular paper), Automatica **25**, 3, pp. 383–391, May, 1989.
Kowalczuk Z., "Finite register length issue in the digital implementation of discrete PID algorithms" (Regular paper), Automatica **25**, 3, pp. 393–405, May, 1989.
Pessen D. W., "Ladder-diagram design for programmable controllers" (Brief paper), Automatica **25**, 3, pp. 407–412, May, 1989.
Stimler D. M., "Scheduling turbofan engine control set points by semi-infinite optimization" (Brief paper), Automatica **25**, 3, pp. 413–420, May, 1989.
Mahmoud M. S., "Dynamic decentralized stabilization for a class of multi-stage processes" (Brief paper), Automatica **25**, 3, pp. 421–425, May, 1989.
Dorato P., H.-B. Park, Yunzhi Li, "An algorithm for interpolation with units in $H^\infty$, with applications to feedback stabilization" (Brief paper), Automatica **25**, 3, pp. 427–430, May, 1989.
Chen Bor-Sen, Tay-Yuh Dong, "LQG optimal control system design under plant perturbation and noise uncertainty: a state-space approach" (Brief paper), Automatica **25**, 3, pp. 431–436, May, 1989.
Verhaegen M. H., "Round-off error propagation in four generally-applicable, recursive, least-squares estimation schemes" (Brief paper), Automatica **25**, 3, pp. 437–444, May, 1989.
Wehenkel L., Th. Van Cutsem, M. Ribbens-Pavella, "Inductive inference applied to on-line transient stability assessment of electric power systems" (Brief paper), Automatica **25**, 3, pp. 445–451, May, 1989.
Hill D. J., Chi Nai Chong, "Lyapunov functions of Lur'e-Postnikov form for structure preserving models of power systems" (Brief paper), Automatica **25**, 3, pp. 453–460, May, 1989.
Saridis G. N., "Analytic formulation of the principle of increasing precision with decreasing intelligence for intelligent machines" (Brief paper), Automatica **25**, 3, pp. 461–467, May, 1989.
Buckley J. J., H. Ying, "Fuzzy controller theory: limit theorems for linear fuzzy control rules" (Brief paper), Automatica **25**, 3, pp. 469–472, May, 1989.
Kraft D., "Optimal control and stochastic estimation, volumes 1 and 2, by M. J. Grimble and M. A. Johnson" (Book review), Automatica **25**, 3, pp. 473–474, May, 1989.
Sinha N. K., "System identification — theory for the user, by L. Ljung" (Book review), Automatica **25**, 3, pp. 475–476, May, 1989.
Gawthrop P. J., "Identification of continuous systems, by H. Unbehauen and G. P. Rao" (Book review), Automatica **25**, 3, pp. 476–478, May, 1989.
Bányász Cs., "Continuous-time self-tuning control volume 1 — design, by P. J. Gawthrop" (Book review), Automatica **25**, 3, pp. 478–479, May, 1989.

## Volume 25, Issue 4 — July, 1989

Sheridan T. B., "Telerobotics" (Regular paper), Automatica **25**, 4, pp. 487–507, July, 1989.
Slotine J.-J. E., Weiping Li, "Composite adaptive control of robot manipulators" (Regular paper), Automatica **25**, 4, pp. 509–519, July, 1989.
Mosca E., G. Zappa, J. M. Lemos, "Robustness of multipredictor adaptive regulators: MUSMAR" (Regular paper), Automatica **25**, 4, pp. 521–529, July, 1989.
Yoshida T., K. A. Loparos, "Quadratic regulatory theory for analytic non-linear systems with additive controls" (Regular paper), Automatica **25**, 4, pp. 531–544, July, 1989.
Stanković S. S., D. D. Šiljak, "Sequential LQG optimization of hierarchically structured systems" (Regular paper), Automatica **25**, 4, pp. 545–559, July, 1989.
Lunze J., "Stability analysis of large-scale systems composed of strongly coupled similar subsystems" (Regular paper), Automatica **25**, 4, pp. 561–570, July, 1989.
Kuipers B., "Qualitative reasoning: modeling and simulation with incomplete knowledge" (Regular paper), Automatica **25**, 4, pp. 571–585, July, 1989.
Kaitala V., "Nonuniqueness of no-memory feedback equilibria in a fishery resource game" (Brief paper), Automatica **25**, 4, pp. 587–592, July, 1989.
Zhang Jingxin, Shijun Lang, "Explicit self-tuning control for a class of non-linear systems" (Brief paper), Automatica **25**, 4, pp. 593–596, July, 1989.
Niedźwiecki M., "Steady-state and parameter tracking properties of self-tuning minimum variance regulators" (Brief paper), Automatica **25**, 4, pp. 597–602, July, 1989.
Gersch W., G. Kitagawa, "Smoothness priors transfer function estimation" (Brief paper), Automatica **25**, 4, pp. 603–608, July, 1989.
Canetti R. M., M. D. España, "Convergence analysis of the least-squares identification algorithm with a variable forgetting factor for time-varying linear systems" (Brief paper), Automatica **25**, 4, pp. 609–612, July, 1989.
Dai H., N. K. Sinha, S. C. Puthenpura, "Robust combined estimation of states and parameters of bilinear systems" (Brief paper), Automatica **25**, 4, pp. 613–616, July, 1989.
Demirbaş K., "Multidimensional state estimation using stacks for dynamic systems with interference" (Brief paper), Automatica **25**, 4, pp. 617–621, July, 1989.
Sznaier M., M. J. Damborg, "Control of constrained discrete time linear systems using quantized controls" (Brief paper), Automatica **25**, 4, pp. 623–628, July, 1989.
Ganesh C., J. B. Pearson, "$H^2$ -optimization with stable controllers" (Brief paper), Automatica **25**, 4, pp. 629–634, July, 1989.
Grimble M. J., "Minimization of a combined $H_\infty$ and LQG cost-function for a two-degrees-of-freedom control design" (Brief paper), Automatica **25**, 4, pp. 635–638, July, 1989.
Bagchi A., "Stochastic differential systems — analysis and filtering, by V. S. Pugachev and I. N. Sinitsyn" (Book review), Automatica **25**, 4, pp. 639–640, July, 1989.
Pohjolainen S., "Mobile control of distributed parameter systems, by A. G. Butkovski and L. M. Pustyl'nikov" (Book review), Automatica **25**, 4, pp. 640–642, July, 1989.
Weir G., "Tasks, errors and mental models, by L. P. Goodstein, H. B. Andersen and S. E. Olsen" (Book review), Automatica **25**, 4, pp. 642–644, July, 1989.

## Volume 25, Issue 5 — September, 1989

Ortega R., Yu Tang, "Robustness of adaptive controllers — a survey" (Survey paper), Automatica **25**, 5, pp. 651–677, September, 1989.
Bansal R., T. Başar, "Simultaneous design of measurement and control strategies for stochastic systems with feedback" (Regular paper), Automatica **25**, 5, pp. 679–694, September, 1989.

Wegrzyn S., J. C. Gille, P. Vidal, "A model for developmental systems — I. Generating word without an operating system" (Regular paper), Automatica **25**, 5, pp. 694–706, September, 1989.

Gille J. C., S. Wegrzyn, P. Vidal, "A model for developmental systems — II. Generating word with an operating system" (), Automatica **25**, 5, pp. 707–714, September, 1989.

Kwon O. K., W. H. Kwon, K. S. Lee, "FIR filters and recursive forms for discrete-time state-space models" (Regular paper), Automatica **25**, 5, pp. 715–728, September, 1989.

Saydy L., G. L. Blankenship, "A bound approach to asymptotic optimality in non-linear filtering of diffusion processes" (Regular paper), Automatica **25**, 5, pp. 729–738, September, 1989.

Tenno R., R. Vilu, H. Oit, "Stochastic control for stabilization of sludge loading characteristics in an aerobic waste water treatment system" (Brief paper), Automatica **25**, 5, pp. 739–742, September, 1989.

Brdys M., P. D. Roberts, M. M. Badi, I. C. Kokkinos, N. Abdullah' "Double loop iterative strategies for hierarchical control of industrial processes" (Brief paper), Automatica **25**, 5, pp. 743–751, September, 1989.

Albertos P., R. Ortega, "On generalized predictive control: two alternative formulations" (Brief paper), Automatica **25**, 5, pp. 753–755, September, 1989.

Casiello F., K. A. Loparo, "Optimal policies for passive learning controllers" (Brief paper), Automatica **25**, 5, pp. 757–763, September, 1989.

Van Huffel S., J. Vandewalle, "On the accuracy of total least squares and least squares techniques in the presence of errors on all data" (Brief paper), Automatica **25**, 5, pp. 765–769, September, 1989.

Hinrichsen D., B. Kelb, A. Linnemann, "An algorithm for the computation of the structured complex stability radius" (Brief paper), Automatica **25**, 5, pp. 771–775, September, 1989.

Gu Guoxiang, E. B. Lee, "Stability testing of time delay systems" (Brief paper), Automatica **25**, 5, pp. 777–780, September, 1989.

Berger A. W., F. C. Schweppe, "Existence of coordinating prices in dynamic systems" (Brief paper), Automatica **25**, 5, pp. 781–784, September, 1989.

Tolle H., "Robot dynamics algorithms, by R. Featherstone" (Book review), Automatica **25**, 5, pp. 785–786, September, 1989.

Zimmermann H. J., "Fuzzy sets and applications: selected papers by L. Zadeh, by R. R. Yager, S. Ovchinnikov, R. M. Tong and H. T. Nguyen" (Book review), Automatica **25**, 5, pp. 787–788, September, 1989.

Halme A., "Discrete-time control systems, by K. Ogata" (Book review), Automatica **25**, 5, pp. 788–789, September, 1989.

Wittenmark B., "Process control systems, application, design and tuning, 3rd ed., by F. G. Shinskey" (Book review), Automatica **25**, 5, pp. 789–790, September, 1989.

Wilfert H.-H., "Mess- und Regelungstechnik. Mathematische Grundlagen, Entwurfsmethoden, Beispiele, by H. P. Geering" (Book review), Automatica **25**, 5, p. 790, September, 1989.

## Volume 25, Issue 6 — November, 1989

Åström K. J., "Automatica prize paper awards" (Editorial), Automatica **25**, 6, p. 798, November, 1989.

Doraiswami R., J. Jiang, "Performance monitoring in expert control systems" (Regular paper), Automatica **25**, 6, pp. 799–811, November, 1989.

Årzén K.-E., "An architecture for expert system based feedback control" (Regular paper), Automatica **25**, 6, pp. 813–827, November, 1989.

Alty J. L., G. Johannsen, "Knowledge-based dialogue for dynamic systems" (Regular paper), Automatica **25**, 6, pp. 829–840, November, 1989.

Metz D., D. Williams, "Near time-optimal control of racing vehicles" (Regular paper), Automatica **25**, 6, pp. 841–857, November, 1989.

Clarke D. W., C. Mohtadi, "Properties of generalized predictive control" (Regular paper), Automatica **25**, 6, pp. 859–875, November, 1989.

Ortega R., M. W. Spong, "Adaptive motion control of rigid robots: a tutorial" (Regular paper), Automatica **25**, 6, pp. 877–888, November, 1989.

Middleton R. H., G. C. Goodwin, Y. Wang, "On the robustness of adaptive controllers using relative deadzones" (Regular paper), Automatica **25**, 6, pp. 889–896, November, 1989.

Pourbabai B., "Optimal selection of buffers in a tandem finite capacity $G/M/1$ queuing system" (Regular paper), Automatica **25**, 6, pp. 897–906, November, 1989.

Li Shu, Yu-Chi Ho, "Sample path and performance homogeneity of discrete event dynamic systems" (Regular paper), Automatica **25**, 6, pp. 907–915, November, 1989.

Choi K. Y., D. N. Butala, "Synthesis of open-loop controls for semibatch copolymerization reactors by inverse feedback control method" (Brief paper), Automatica **25**, 6, pp. 917–923, November, 1989.

Moore J. B., Lige Xia, "On a class of stabilizing partially decentralized controllers" (Brief paper), Automatica **25**, 6, pp. 925–933, November, 1989.

Badr R. I., M. F. Hassan, J. Bernussou, A. Y. Bilal, "Stability and performance robustness for multivariable linear systems" (Brief paper), Automatica **25**, 6, pp. 935–942, November, 1989.

Wen Changyun, D. J. Hill, "Robustness of adaptive control without deadzones, data normalization or persistence of excitation" (Brief paper), Automatica **25**, 6, pp. 943–947, November, 1989.

Walter E., L. Pronzato, A. Venot, "Theoretical properties of sign change criteria for robust off-line estimation" (Brief paper), Automatica **25**, 6, pp. 949–952, November, 1989.

Lennartson B., "Singular perturbation methods in control: analysis and design, by P. Kokotović, H. K. Khalil and J. O'Reilly" (Book review), Automatica **25**, 6, pp. 953–954, November, 1989.

Evans F. J., "Multivariable control — a graph theoretic approach, by K. J. Reinschke" (Book review), Automatica **25**, 6, pp. 955–956, November, 1989.

Thoma M., "Multivariable control for industrial application, J. O'Reilly (editor)" (Book review), Automatica **25**, 6, pp. 956–957, November, 1989.

Franke D., "Sensors and controls in the analysis of distributed systems, by A. El Jai and A. J. Pritchard" (Book review), Automatica **25**, 6, pp. 957–958, November, 1989.

## Volume 26, Issue 1 — January, 1990

Axelby G. S., "Editor-in chief's note" (Editorial), Automatica **26**, 1, p. 1, January, 1990.

Eykhoff P., P. C. Parks, "Identification and system parameter estimation; where do we stand now" (Editorial), Automatica **26**, 1, pp. 3–5, January, 1990.

Ljung L., S. Gunnarsson, "Adaptation and tracking in system identification — a survey" (Survey paper), Automatica **26**, 1, pp. 7–21, January, 1990.

Unbehauen H., G. P. Rao, "Continuous-time approaches to system identification -a survey" (Survey paper), Automatica **26**, 1, pp. 23–35, January, 1990.

Tulleken H. J. A. F., "Generalized binary noise test-signal concept for improved identification-experiment design" (Regular paper), Automatica **26**, 1, pp. 37–49, January,

1990.
Tugnait J. K., "Consistent parameter estimation for non-causal autoregressive models via higher-order statistics" (Regular paper), Automatica **26**, 1, pp. 51–61, January, 1990.
Sagara S., Zhen-Yu Zhao, "Numerical integration approach to on-line identification of continuous-time systems" (Regular paper), Automatica **26**, 1, pp. 63–74, January, 1990.
Favier G., D. Dubois, "A review of *k*-step-ahead predictors" (Regular paper), Automatica **26**, 1, pp. 75–84, January, 1990.
Haest M., G. Bastin, M. Gevers, V. Wertz, "ESPION: an expert system for system identification" (Regular paper), Automatica **26**, 1, pp. 85–95, January, 1990.
Salgado M. E., C. E. De Souza, G. C. Goodwin, "Qualitative aspects of the distribution of errors in least squares estimation" (Regular paper), Automatica **26**, 1, pp. 97–101, January, 1990.
Gombani A., M. Pavon, "a general Hankel-norm approximation scheme for linear recursive filtering" (Regular paper), Automatica **26**, 1, pp. 103–112, January, 1990.
Krause J. M., P. P. Khargonekar, "Parameter identification in the presence of non-parametric dynamic uncertainty" (Regular paper), Automatica **26**, 1, pp. 113–123, January, 1990.
Söderström T., P. Stoica, "On covariance function tests used in system identification" (Regular paper), Automatica **26**, 1, pp. 125–133, January, 1990.
Morrell D. J. G., B. W. Hogg, "Identification and validation of turbogenerator models" (Regular paper), Automatica **26**, 1, pp. 135–156, January, 1990.
Candy J. V., E. J. Sullivan, "Wave estimation: a model-based identification approach" (Regular paper), Automatica **26**, 1, pp. 157–166, January, 1990.
Wahlberg B., "The effects of rapid sampling in system identification" (Brief paper), Automatica **26**, 1, pp. 167–170, January, 1990.
Beghelli S., R. P. Guidorzi, U. Soverini, "The Frisch scheme in dynamic system identification" (Brief paper), Automatica **26**, 1, pp. 171–176, January, 1990.
Ahlén A., "Identifiability of the deconvolution problem" (Brief paper), Automatica **26**, 1, pp. 177–181, January, 1990.
Kulhavý R., "Control and dynamic systems: advances in theory and applications. Volume 26: system identification and adaptive control, C. T. Leondes (editor)" (Book review), Automatica **26**, 1, pp. 183–184, January, 1990.
Vingerhoeds R. A., "Modelisation et identification en traitement du signal, by M. Najim" (Book review), Automatica **26**, 1, pp. 185–186, January, 1990.
Giannakis G. B., "Lessons in digital estimation theory, by J. M. Mendel" (Book review), Automatica **26**, 1, pp. 187–188, January, 1990.

## Volume 26, Issue 2 — March, 1990

Walter E., L. Pronzato, "Qualitative and quantitative experiment design for phenomenological models — a survey" (Survey paper), Automatica **26**, 2, pp. 195–213, March, 1990.
Pérez-Arriaga I. J., G. C. Verghese, F. L. Pagola, J. L. Sancha, F. C. Schweppe' "Developments in selective modal analysis of small-signal stability in electric power systems" (Regular paper), Automatica **26**, 2, pp. 215–231, March, 1990.
Liu Yi, B. D. O. Anderson, Uy-Loi Ly, "Coprime factorization controller reduction with Bezout identity induced frequency weighting" (Regular paper), Automatica **26**, 2, pp. 233–249, March, 1990.
Vaz A. F., E. J. Davison, "Modular model reduction for interconnected systems" (Regular paper), Automatica **26**, 2, pp. 251–261, March, 1990.
Mao Cheng-Jyi, Wei-Song Lin, "Decentralized control of interconnected systems with unmodelled nonlinearity and interaction" (Regular paper), Automatica **26**, 2, pp. 263–268, March, 1990.
Hollot C. V., D. P. Looze, A. C. Bartlett, "Parametric uncertainty and unmodeled dynamics: analysis via parameter space methods" (Regular paper), Automatica **26**, 2, pp. 269–282, March, 1990.
Barmish B. R., R. Tempo, "The robust root locus" (Regular paper), Automatica **26**, 2, pp. 283–292, March, 1990.
Mikleš J., "A multivariable self-tuning controller based on pole-placement design" (Regular paper), Automatica **26**, 2, pp. 293–302, March, 1990.
Wang Sheng-De, Te-Son Kuo, "Design of robust linear state feedback laws: ellipsoidal set-theoretic approach" (Regular paper), Automatica **26**, 2, pp. 303–309, March, 1990.
Tugnait J. K., "Consistent order selection for noncausal autoregressive models via higher-order statistics" (Regular paper), Automatica **26**, 2, pp. 311–320, March, 1990.
Fiagbedzi Y. A., A. E. Pearson, "A state observer for systems described by functional differential equations" (Regular paper), Automatica **26**, 2, pp. 321–331, March, 1990.
Mäkilä P. M., "Approximation of stable systems by Laguerre filters" (Regular paper), Automatica **26**, 2, pp. 333–345, March, 1990.
Toivonen H. T., J. Tamminen, "Minimax robust LQ control of a thermomechanical pulping plant" (Brief paper), Automatica **26**, 2, pp. 347–351, March, 1990.
Shoureshi R., M. E. Momot, M. D. Roesler, "Robust control for manipulators with uncertain dynamics" (Brief paper), Automatica **26**, 2, pp. 352–359, March, 1990.
Rivera D. E., M. Morari, "Low-order SISO controller tuning methods for the $H_2$, $H_\infty$ and $\mu$ objective functions" (Brief paper), Automatica **26**, 2, pp. 361–369, March, 1990.
Jennings L. S., K. L. Teo, "A computational algorithm for functional inequality constrained optimization problems" (Brief paper), Automatica **26**, 2, pp. 371–375, March, 1990.
Colaneri P., R. Scattolini, N. Schiavoni, "Stabilization of multirate sampled-data linear systems" (Brief paper), Automatica **26**, 2, pp. 377–380, March, 1990.
Gertler J., D. Singer, "A new structural framework for parity equation-based failure detection and isolation" (Brief paper), Automatica **26**, 2, pp. 381–388, March, 1990.
Christensen G. S., S. A. Soliman, "Optimal filtering of linear discrete dynamic systems based on least absolute value approximations" (Brief paper), Automatica **26**, 2, pp. 389–395, March, 1990.
Christensen G. S., S. A. Soliman, "Optimal filtering for continuous linear dynamic systems based on WLAV approximations" (Brief paper), Automatica **26**, 2, pp. 397–400, March, 1990.
Runggaldier W. J., C. Visentin, "Combined filtering and parameter estimation; approximations and robustness" (Brief paper), Automatica **26**, 2, pp. 401–404, March, 1990.
Hippe P., "A nonminimal representation of reduced-order observers" (Brief paper), Automatica **26**, 2, pp. 405–409, March, 1990.
Lewis F. L., "Geometric design techniques for observers in singular systems" (Brief paper), Automatica **26**, 2, pp. 411–415, March, 1990.
Dias R. J., A. Mesquita, "A closed form solution for regular descriptor systems using the Moore-Penrose generalized inverse" (Brief paper), Automatica **26**, 2, pp. 417–420, March, 1990.
Banaszuk A., M. Kocięcki, K. M. Przyłuski, "Remarks on observability of implicit linear discrete-time systems" (Brief paper), Automatica **26**, 2, pp. 421–423, March, 1990.
Diduch C. P., R. Doraiswami, "Reachability of sampled data

systems with input and output delays" (Brief paper), Automatica **26**, 2, pp. 425–428, March, 1990.
Hirsch-Kreinsen H., R. Schultz-Wild, "Implementation processes of new technologies - management objectives and interests" (Brief paper), Automatica **26**, 2, pp. 429–433, March, 1990.
Lefebvre M., "Hitting lines at minimal cost with a Gaussian process" (Technical Communiqué), Automatica **26**, 2, pp. 435–436, March, 1990.
Gu D.-W., M. C. Tsai, I. Postlethwaite, "Improved formulae for the 2-block $H_\infty$ super-optimal solution" (Technical Communiqué), Automatica **26**, 2, pp. 437–440, March, 1990.
Osiadacz A. J., "Direct methods for sparse matrices, by I. S. Duff, A. M. Erisman and J. K. Reid" (Book review), Automatica **26**, 2, pp. 441–443, March, 1990.
Valášek P., "Microprocessors for engineers: interfacing for real-time applications, by P. K. Sinha" (Book review), Automatica **26**, 2, p. 441, March, 1990.
Carrie A., "Manufacturing systems: an introduction to the technologies, by D. Williams" (Book review), Automatica **26**, 2, pp. 443–444, March, 1990.
Kolář P., "An introduction to automata theory, by M. W. Shields" (Book review), Automatica **26**, 2, pp. 444–445, March, 1990.
Bititci U. S., "Manufacturing intelligence, by P. K. Wright and D. A. Bourne" (Book review), Automatica **26**, 2, pp. 445–447, March, 1990.

## Volume 26, Issue 3 — May, 1990

Frank P. M., "Fault diagnosis in dynamic systems using analytical and knowledge-based redundancy — a survey and some new results" (Survey paper), Automatica **26**, 3, pp. 459–474, May, 1990.
Fasol K. H., G. M. Pohl, "Simulation, controller design and field tests for a hydropower plant — a case study" (Regular paper), Automatica **26**, 3, pp. 475–485, May, 1990.
Liu Yi, B. D. O. Anderson, "Frequency weighted controller reduction methods and loop transfer recovery" (Regular paper), Automatica **26**, 3, pp. 487–497, May, 1990.
Ikeda M., D. D. Šiljak, "Optimality and robustness of linear quadratic control for nonlinear systems" (Regular paper), Automatica **26**, 3, pp. 499–511, May, 1990.
Ying Hao, W. Siler, J. J. Buckley, "Fuzzy control theory: a nonlinear case" (Regular paper), Automatica **26**, 3, pp. 513–520, May, 1990.
Sznaier M., M. J. Damborg, "Heuristically enhanced feedback control of constrained discrete-time linear systems" (Regular paper), Automatica **26**, 3, pp. 521–532, May, 1990.
Radenković ', S. S. Stanković, "Strong consistency of parameter estimates in direct self-tuning control algorithms based on stochastic approximation" (Regular paper), Automatica **26**, 3, pp. 533–544, May, 1990.
Kulhavý R., "Recursive nonlinear estimation: a geometric approach" (Regular paper), Automatica **26**, 3, pp. 545–555, May, 1990.
Ferretti G., C. Maffezzoni, V. Rossi, "A novel approach to speed control of hydro power stations" (Brief paper), Automatica **26**, 3, pp. 557–565, May, 1990.
Castro R., Jm. Alvarez, Jq. Alvarez, "Nonlinear disturbance decoupling control of a binary distillation column" (Brief paper), Automatica **26**, 3, pp. 567–572, May, 1990.
Lennartson B., "On the choice of controller and sampling period for linear stochastic control" (Brief paper), Automatica **26**, 3, pp. 573–578, May, 1990.
Schoukens J., "Modeling of continuous time systems using a discrete time representation" (Brief paper), Automatica **26**, 3, pp. 579–583, May, 1990.
Murata S., Y. Ando, M. Suzuki, "Design of a high gain regulator by the multiple time scale approach" (Brief paper), Automatica **26**, 3, pp. 585–591, May, 1990.
Iftar A., Ü. Özgüner, "Contractible controller design and optimal control with state and input inclusion" (Brief paper), Automatica **26**, 3, pp. 593–597, May, 1990.
Canudas de Wit C., J. Carrillo, "A modified EW-RLS algorithm for systems with bounded disturbances" (Brief paper), Automatica **26**, 3, pp. 599–606, May, 1990.
Novovičová J., "M-estimators and gnostical estimators for identification of a regression model" (Brief paper), Automatica **26**, 3, pp. 607–610, May, 1990.
Martin T., E. Ulich, H. J. Warnecke, "Appropriate automation for flexible manufacturing" (Brief paper), Automatica **26**, 3, pp. 611–616, May, 1990.
Mäkilä P. M., "$H^\infty$ -optimization and optimal rejection of persistent disturbances" (Technical Communiqué), Automatica **26**, 3, pp. 617–618, May, 1990.
Kolla S. R., J. B. Farison, "Improved robust stability bounds for discrete-time regulators with computational delays" (Technical Communiqué), Automatica **26**, 3, pp. 619–621, May, 1990.
Eslami M., "Computer-aided determination of stability robustness measure of linear discrete-time systems" (Technical Communiqué), Automatica **26**, 3, pp. 623–627, May, 1990.
Zhong Y., P. R. Bélanger, S. Gendron, "Parameter identification of the heating zone dynamics in the Kamyr digester" (Technical Communiqué), Automatica **26**, 3, pp. 629–631, May, 1990.
Kabaila P., "On system identification for linear minimum variance prediction or control" (Technical Communiqué), Automatica **26**, 3, pp. 633–635, May, 1990.
Palmor Z. J., Y. Halevi, "Robustness properties of sampled-data systems with dead time compensators" (Technical Communiqué), Automatica **26**, 3, pp. 637–640, May, 1990.
Åström K. J., "Encyclopedia of artificial intelligence. Volumes 1 and 2, S. C. Shapiro (editor-in-chief)" (Book review), Automatica **26**, 3, p. 641, May, 1990.
Hunt K. J., "Expert systems 1987, an assessment of technology and applications, by T. C. Walker and R. K. Miller" (Book review), Automatica **26**, 3, pp. 642–643, May, 1990.

## Volume 26, Issue 4 — July, 1990

Haber R., H. Unbehauen, "Structure identification of nonlinear dynamic systems — a survey on input/output approaches" (Survey paper), Automatica **26**, 4, pp. 651–677, July, 1990.
Amerongen J. van, P. G. M. van der Klugt, H. R. van Nauta Lemke, "Rudder roll stabilization for ships" (Regular paper), Automatica **26**, 4, pp. 679–690, July, 1990.
Cluett W. R., E. Goberdhansingh, "Autotuning for model-based predictive control" (Regular paper), Automatica **26**, 4, pp. 691–697, July, 1990.
Wittenmark B., "Adaptive stability augmentation" (Regular paper), Automatica **26**, 4, pp. 699–707, July, 1990.
Yaniv O., P.-O. Gutman, L. Neumann, "An algorithm for the adaptation of a robust controller to reduced plant uncertainty" (Regular paper), Automatica **26**, 4, pp. 709–720, July, 1990.
Popescu Th. D., S. Demetriu, "Analysis and simulation of strong earthquake ground motions using ARMA models" (Regular paper), Automatica **26**, 4, pp. 721–737, July, 1990.
Schierwagen A. K., "Identification problems in distributed parameter neuron models" (Regular paper), Automatica **26**, 4, pp. 739–755, July, 1990.
Mathelin M. de, M. Bodson, "Frequency domain conditions

for parameter convergence in multivariable recursive identification" (Regular paper), Automatica **26**, 4, pp. 757–767, July, 1990.

Zheng Wei-Xing, Chun-Bo Feng, "Identification of stochastic time lag systems in the presence of colored noise" (Regular paper), Automatica **26**, 4, pp. 769–779, July, 1990.

Dumont G. A., C. C. Zervos, G. L. Pageau, "Laguerre-based adaptive control of *pH* in an industrial bleach plant extraction stage" (Brief paper), Automatica **26**, 4, pp. 781–787, July, 1990.

Sundareshan M. K., R. M. Elbanna, "Design of decentralized observation schemes for large-scale interconnected systems: some new results" (Brief paper), Automatica **26**, 4, pp. 789–796, July, 1990.

Cao Runsheng, T. McAvoy, "Evaluation of a pattern recognition adaptive PID controller" (Brief paper), Automatica **26**, 4, pp. 797–801, July, 1990.

Gentil S., A. Y. Barraud, K. Szafnicki, "SEXI: an expert identification package" (Brief paper), Automatica **26**, 4, pp. 803–809, July, 1990.

Stassen H. G., G. Johannsen, N. Moray, "Internal representation, internal model, human performance model and mental workload" (Brief paper), Automatica **26**, 4, pp. 811–820, July, 1990.

Nijmeijer H., "Nichtlineare und adaptive Regelungssysteme, by J. Böcker, I. Hartmann and C. Zwansig" (Book review), Automatica **26**, 4, p. 821, July, 1990.

Doebelin E. O., "Controlling electrohydraulic systems, by W. R. Anderson" (Book review), Automatica **26**, 4, pp. 822–823, July, 1990.

Dastych J., "Systems modeling and computer simulation, by N. A. Kheir" (Book review), Automatica **26**, 4, pp. 823–824, July, 1990.

West J. C., "Feedback control systems, by C. L. Philips and R. D. Harbor" (Book review), Automatica **26**, 4, pp. 824–825, July, 1990.

## Volume 26, Issue 5 — September, 1990

Wang Fei-Yue, G. N. Saridis, "A coordination theory for intelligent machines" (Regular paper), Automatica **26**, 5, pp. 833–844, September, 1990.

Hrovat D., "Optimal active suspension structures for quarter-car vehicle models" (Regular paper), Automatica **26**, 5, pp. 845–860, September, 1990.

Mills J. K., "Stability of robotic manipulators during transition to and from compliant motion" (Regular paper), Automatica **26**, 5, pp. 861–874, September, 1990.

Watanabe K., S. G. Tzafestas, "A hierarchical multiple model adaptive control of discrete-time stochastic systems for sensor and actuator uncertainties" (Regular paper), Automatica **26**, 5, pp. 875–886, September, 1990.

Belforte G., B. Bona, V. Cerone, "Parameter estimation algorithms for a set-membership description of uncertainty" (Regular paper), Automatica **26**, 5, pp. 887–898, September, 1990.

Ma C. C. H., Y. Altintas, "Direct adaptive cutting force control of milling processes" (Brief paper), Automatica **26**, 5, pp. 899–902, September, 1990.

Luck R., A. Ray, "An observer-based compensator for distributed delays" (Brief paper), Automatica **26**, 5, pp. 903–908, September, 1990.

Paz R. A., J. V. Medanić, "Design of disturbance attenuating controllers: a Riccati-based FH norm optimization algorithm" (Brief paper), Automatica **26**, 5, pp. 909–913, September, 1990.

Scattolini R., S. Bittanti, "On the choice of the horizon in long-range predictive control - some simple criteria" (Brief paper), Automatica **26**, 5, pp. 915–917, September, 1990.

Shen Xue-Min, Z. Gajic, "Near-optimum steady state regulators for stochastic linear weakly coupled systems" (Brief paper), Automatica **26**, 5, pp. 919–923, September, 1990.

Weinfeld R., "Towards more precise recursive prediction error algorithms" (Brief paper), Automatica **26**, 5, pp. 925–928, September, 1990.

Bittanti S., P. Bolzern, M. Campi, "Convergence and exponential convergence of identification algorithms with directional forgetting factor" (Brief paper), Automatica **26**, 5, pp. 929–932, September, 1990.

Kolla S. R., J. B. Farison, "Improved stability robustness bounds using state transformation for linear discrete systems" (Brief paper), Automatica **26**, 5, pp. 933–935, September, 1990.

Kopacek P., "International encyclopedia of robotics — applications and automation, volumes 1–3, R. C. Dorf (editor)" (Book review), Automatica **26**, 5, p. 937, September, 1990.

Najim M., "Algorithmes adaptatifs et approximations stochastiques. Thèorie et application, by A. Benveniste, M. Métivier and P. Priouret" (Book review), Automatica **26**, 5, pp. 938–939, September, 1990.

Isidori A., "Nonlinear dynamical systems, by P. A. Cook" (Book review), Automatica **26**, 5, pp. 939–940, September, 1990.

## Volume 26, Issue 6 — November, 1990

Åström K. J., "Automatica prize paper awards, 1990" (Editorial), Automatica **26**, 6, p. 947, November, 1990.

Grimble M. J., "LQG predictive optimal control for adaptive applications" (Regular paper), Automatica **26**, 6, pp. 949–961, November, 1990.

Huang Jie, W. J. Rugh, "On a nonlinear multivariable servomechanism problem" (Regular paper), Automatica **26**, 6, pp. 963–972, November, 1990.

Huijberts H. J. C., H. Nijmeijer, "Local nonlinear model matching: from linearity to nonlinearity" (Regular paper), Automatica **26**, 6, pp. 973–983, November, 1990.

Mäkilä P. M., "Laguerre series approximation of infinite dimensional systems" (Regular paper), Automatica **26**, 6, pp. 985–995, November, 1990.

Chung S.-T., J. W. Grizzle, "Sampled-data observer error linearization" (Regular paper), Automatica **26**, 6, pp. 997–1007, November, 1990.

Sawaragi T., S. Iwai, O. Katai, "Self-organization of conceptual generalities and pattern-directed learning" (Regular paper), Automatica **26**, 6, pp. 1009–1023, November, 1990.

Cacciabue P. C., G. Mancini, U. Bersini, "A model of operator behavior for man-machine system simulation" (Regular paper), Automatica **26**, 6, pp. 1025–1034, November, 1990.

Chen Bor-Sen, Wen-June Wang, "Robust stabilization of nonlinearly perturbed large-scale systems by decentralized observer-controller compensators" (Brief paper), Automatica **26**, 6, pp. 1035–1041, November, 1990.

Franklin G., "Digital control system design, by G. H. Hostetter" (Book review), Automatica **26**, 6, pp. 1043–1044, November, 1990.

Aeyels D., "Mathematical theories of non-linear systems, by S. P. Banks" (Book review), Automatica **26**, 6, pp. 1044–1045, November, 1990.

## Volume 27, Issue 1 — January, 1991

Bertsekas D. P., J. N. Tsitsiklis, "Some aspects of parallel and distributed iterative algorithms — a survey" (Survey paper), Automatica **27**, 1, pp. 3–21, January, 1991.

LaMaire R. O., L. Valavani, M. Athans, G. Stein, "A frequency-domain estimator for use in adaptive control

systems" (Regular paper), Automatica **27**, 1, pp. 23–38, January, 1991.
Tay Teng Tiow., J. B. Moore, "Enhancement of fixed controllers via adaptive-$Q$ disturbance estimate feedback" (Regular paper), Automatica **27**, 1, pp. 39–53, January, 1991.
Demircioğlu H., P. J. Gawthrop, "Continuous-time generalized predictive control (CGPC)" (Regular paper), Automatica **27**, 1, pp. 55–74, January, 1991.
Ackermann J., D. Kaesbauer, R. Muench, "Robust gamma-stability analysis in a plant parameter space" (Regular paper), Automatica **27**, 1, pp. 75–85, January, 1991.
Byrnes C. I., A. Isidori, "On the attitude stabilization of rigid spacecraft" (Regular paper), Automatica **27**, 1, pp. 87–95, January, 1991.
Johannsen G., J. L. Alty, "Knowledge engineering for industrial expert systems" (Regular paper), Automatica **27**, 1, pp. 97–114, January, 1991.
Wehenkel L., M. Pavella, "Decision trees and transient stability of electric power systems" (Regular paper), Automatica **27**, 1, pp. 115–134, January, 1991.
Segall N. L., J. F. MacGregor, J. D. Wright, "One-step optimal saturation correction" (Brief paper), Automatica **27**, 1, pp. 135–139, January, 1991.
Iftar A., Ü. Özgüner, "Modeling of uncertain dynamics for robust controller design in state space" (Brief paper), Automatica **27**, 1, pp. 141–146, January, 1991.
Tesi A., A. Vicino, "Robust absolute stability of Lur'e control systems in parameter space" (Brief paper), Automatica **27**, 1, pp. 147–151, January, 1991.
Giri F., M. M'Saad, J. M. Dion, L. Dugard, "On the robustness of discrete-time indirect adaptive (linear) controllers" (Brief paper), Automatica **27**, 1, pp. 153–159, January, 1991.
Gu Keqin, Ye Hwa Chen, M. A. Zohdy, Nan K. Loh, "Quadratic stabilizability of uncertain systems: a two level optimization setup" (Brief paper), Automatica **27**, 1, pp. 161–165, January, 1991.
Hyland D. C., E. G. Collins, Jr., "Some majorant robustness results for discrete-time systems" (Brief paper), Automatica **27**, 1, pp. 167–172, January, 1991.
Ma C. C. H., "Rapid tracking of complex trajectories in short-duration processes" (Brief paper), Automatica **27**, 1, pp. 173–176, January, 1991.
Juan Yeo-CHow, P. T. Kabamba, "Optimal hold functions for sampled data regulation" (Brief paper), Automatica **27**, 1, pp. 177–181, January, 1991.
Söderström T., P. Stoica, B. Friedlander, "An indirect prediction error method for system identification" (Brief paper), Automatica **27**, 1, pp. 183–188, January, 1991.
Campbell S. L., "Comments on 2-D descriptor systems" (Brief paper), Automatica **27**, 1, pp. 189–192, January, 1991.
Mustafa D., K. Glover, D. J. N. Limebeer, "Solutions to the $H_\infty$ general distance problem which minimize an entropy integral" (Brief paper), Automatica **27**, 1, pp. 193–199, January, 1991.
Dahleh M., M. A. Dahleh, "On slowly time-varying systems" (Brief paper), Automatica **27**, 1, pp. 201–205, January, 1991.
Clarke D. W., "Adaptive control, by K. J. Åström and B. Wittenmark" (Book review), Automatica **27**, 1, pp. 207–208, January, 1991.
Böhme J. F., "Introduction to signals and systems, by E. Kamen" (Book review), Automatica **27**, 1, p. 209, January, 1991.
Willems J. L., "State variable methods in automatic control, by K. Furuta and A. Sano" (Book review), Automatica **27**, 1, p. 210, January, 1991.
Johannson G., "Binäre Steuerungstechnik — eine Einführung, by K. H. Fasol" (Book review), Automatica **27**, 1, pp. 210–211, January, 1991.
Kulhavý R., "Statistical analysis and control of dynamic systems, by H. Akaike and T. Nakagawa" (Book review), Automatica **27**, 1, pp. 211–212, January, 1991.
Michálek J., "Engineering applications of stochastic processes: theory, problems and solutions, by A. Zayezdny, D. Tabak and D. Wulich" (Book review), Automatica **27**, 1, p. 213, January, 1991.

## Volume 27, Issue 2 — March, 1991

Perdu D. M., A. H. Levis, "A Petri net model for evaluation of expert systems in organizations" (Regular paper), Automatica **27**, 2, pp. 225–237, March, 1991.
Prock J., "A new technique for fault detection using Petri nets" (Regular paper), Automatica **27**, 2, pp. 239–245, March, 1991.
Kanellakopoulos I., P. V. Kokotovic, R. Marino, "An extended direct scheme for robust adaptive nonlinear control" (Regular paper), Automatica **27**, 2, pp. 247–255, March, 1991.
Chen B. M., A. Saberi, P. Sannuti, "A new stable compensator design for exact and approximate loop transfer recovery" (Regular paper), Automatica **27**, 2, pp. 257–280, March, 1991.
Middleton R. H., "Trade-offs in linear control system design" (Regular paper), Automatica **27**, 2, pp. 281–292, March, 1991.
Özbay H., A. Tannenbaum, "On the structure of suboptimal $H_\infty$ controllers in the sensitivity minimization problem for distributed stable plants" (Regular paper), Automatica **27**, 2, pp. 293–305, March, 1991.
Rotea M. A., P. P. Khargonekar, "$H^2$ -optimal control with an $H^\infty$ -constraint: the state feedback case" (Regular paper), Automatica **27**, 2, pp. 307–316, March, 1991.
McDonald J. S., J. B. Pearson, "$\ell^1$ -optimal control of multivariable systems with output norm constraints" (Regular paper), Automatica **27**, 2, pp. 317–329, March, 1991.
Commault C., J. M. Dion, J. A. Torres, "Minimal structure in the block decoupling problem with stability" (Regular paper), Automatica **27**, 2, pp. 331–338, March, 1991.
Kárný M., "Estimation of the control period for self-tuners" (Regular paper), Automatica **27**, 2, pp. 339–348, March, 1991.
Syrmos V. L., F. L. Lewis, "A geometric approach to proportional-plus-derivative feedback using quotient and partitioned subspaces" (Regular paper), Automatica **27**, 2, pp. 349–369, March, 1991.
Kormylo J., "Kalman smoothing via auxiliary outputs" (Brief paper), Automatica **27**, 2, pp. 371–373, March, 1991.
Patel R. V., P. Misra, "Numerical computation of decentralized fixed modes" (Brief paper), Automatica **27**, 2, pp. 375–382, March, 1991.
Sundareshan M. K., R. M. Elbanna, "Qualitative analysis and decentralized controller synthesis for a class of large-scale systems with symmetrically interconnected subsystems" (Brief paper), Automatica **27**, 2, pp. 383–388, March, 1991.
Feng Weining, "On practical stability of linear multivariable feedback systems with time-delays" (Brief paper), Automatica **27**, 2, pp. 389–394, March, 1991.
Hunt K. J., M. Šebek, "Implied polynomial matrix equations in multivariable stochastic optimal control" (Brief paper), Automatica **27**, 2, pp. 395–398, March, 1991.
Giri F., J. M. Dion, L. Dugard, M. M'Saad, "Parameter estimation aspects in adaptive control" (Brief paper), Automatica **27**, 2, pp. 399–402, March, 1991.
Milanese M., A. Vicino, "Estimation theory for nonlinear models and set membership uncertainty" (Brief paper),

Automatica **27**, 2, pp. 403–408, March, 1991.
Mohan B. M., K. B. Datta, "Linear time-invariant distributed parameter system identification via orthogonal functions" (Brief paper), Automatica **27**, 2, pp. 409–412, March, 1991.
Baratchart L., M. Cardelli, M. Olivi, "Identification and rational $L^2$ approximation: a gradient algorithm" (Brief paper), Automatica **27**, 2, pp. 413–418, March, 1991.
Chiu Min-Sen, Y. Arkun, "A new result on relative gain array, Niederlinski index and decentralized stability condition: 2 * 2 plant cases" (Technical Communiqué), Automatica **27**, 2, pp. 419–421, March, 1991.
Ortega R., "Passivity properties for stabilization of cascaded nonlinear systems" (Technical Communiqué), Automatica **27**, 2, pp. 423–424, March, 1991.
Karrila S., T. Westerlund, "An elementary derivation of the maximum likelihood estimator of the covariance matrix, and a illustrative determinant inequality" (Technical Communiqué), Automatica **27**, 2, pp. 425–426, March, 1991.
Motus L., "Real-time computer control: an introduction, by S. Bennett" (Book review), Automatica **27**, 2, pp. 427–428, March, 1991.
Schmid C., "Computer control of machines and processes, by J. G. Bollinger and N. A. Duffei" (Book review), Automatica **27**, 2, pp. 428–429, March, 1991.
Rake H., "Industrial control electronics: applications and design, by J. M. Jacob" (Book review), Automatica **27**, 2, p. 429, March, 1991.
Ramon H., "Power hydraulics, by M. J. Pinches and J. G. Ashby" (Book review), Automatica **27**, 2, pp. 430–431, March, 1991.
Barrett J. F., "Random signals and systems, by R. E. Mortensen" (Book review), Automatica **27**, 2, pp. 431–434, March, 1991.

## Volume 27, Issue 3 — May, 1991

Mills P. M., P. L. Lee, P. McIntosh, "A practical study of adaptive control of an alumina calciner" (Regular paper), Automatica **27**, 3, pp. 441–448, May, 1991.
Stephan R. M., V. Hahn, J. Dastych, H. Unbehauen, "Adaptive and robust cascade schemes for Thyristor driven DC-motor speed control" (Regular paper), Automatica **27**, 3, pp. 449–461, May, 1991.
Lévine J., P. Rouchon, "Quality control of binary distillation columns via nonlinear aggregated models" (Regular paper), Automatica **27**, 3, pp. 463–480, May, 1991.
Tsiotras P., H. J. Kelley, "Drag-law effects in Goddard problem" (Regular paper), Automatica **27**, 3, pp. 481–490, May, 1991.
Bentsman J., K. S. Hong, J. Fakhfakh, "Vibrational control of nonlinear time lag systems: vibrational stabilization and transient behavior" (Regular paper), Automatica **27**, 3, pp. 491–500, May, 1991.
Fruchter G., "Generalized zero sets location and absolute robust stabilization of continuous nonlinear control systems" (Regular paper), Automatica **27**, 3, pp. 501–512, May, 1991.
Akimoto K., N. Sannomiya, Y. Nishikawa, T. Tsuda, "An optimal gas supply for a power plant using a mixed integer programming model" (Brief paper), Automatica **27**, 3, pp. 513–518, May, 1991.
Lee J. H., M. Morari, "Robust measurement selection" (Brief paper), Automatica **27**, 3, pp. 519–527, May, 1991.
Hang C. C., D. Chin, "Reduced order process modelling in self-tuning control" (Brief paper), Automatica **27**, 3, pp. 529–534, May, 1991.
De Luca A., L. Lanari, G. Oriolo, "A sensitivity approach to optimal spline robot trajectories" (Brief paper), Automatica **27**, 3, pp. 535–539, May, 1991.
Berger W. A., R. J. Perry, H. H. Sun, "An algorithm for the assignment of system zeros" (Brief paper), Automatica **27**, 3, pp. 541–544, May, 1991.
Chen Wei Liang, J. S. Gibson, "A Lvapunov robustness bound for linear systems with periodic uncertainties" (Brief paper), Automatica **27**, 3, pp. 545–547, May, 1991.
Hennett J.-C., J.-P. Beziat, "A class of invariant regulators for the discrete-time linear constrained regulation problem" (Brief paper), Automatica **27**, 3, pp. 549–554, May, 1991.
Casavola A., M. J. Grimble, E. Mosca, P. Nistri, "Continuous-time LQ regulator design by polynomial equations" (Brief paper), Automatica **27**, 3, pp. 555–558, May, 1991.
Shamma J. S., M. Athans, "Guaranteed properties of gain scheduled control of linear parameter-varying plants" (Brief paper), Automatica **27**, 3, pp. 559–564, May, 1991.
Yaniv O., "Arbitrarily small sensitivity in multiple-input-output uncertain feedback systems" (Brief paper), Automatica **27**, 3, pp. 565–568, May, 1991.
Partington J. R., "Approximation of delay systems by Fourier-Laguerre series" (Brief paper), Automatica **27**, 3, pp. 569–572, May, 1991.
Rustem B., "The diagonalizability of quadratic functions and the arbitrariness of shadow prices" (Brief paper), Automatica **27**, 3, pp. 573–578, May, 1991.
Haimes Y. Y., Duan Li, "A hierarchical-multiobjective framework for risk management" (Brief paper), Automatica **27**, 3, pp. 579–584, May, 1991.
Jiroušek R., "Expert systems — principles and programming, by J. C. Giarratano and G. Riley" (Book review), Automatica **27**, 3, pp. 585–586, May, 1991.
Gottzein E., "Large space structures: dynamics and control, by S. N. Atluri and A. K. Amos" (Book review), Automatica **27**, 3, pp. 586–588, May, 1991.
Vamos T., "Applied control of manipulation robots — analysis, synthesis and exercises, by M. Vukobratovic and D. Stokic" (Book review), Automatica **27**, 3, pp. 588–589, May, 1991.
Vamos T., "Applied dynamics of manipulation robots — modelling, analysis and examples, by M. Vukobratovic" (Book review), Automatica **27**, 3, pp. 588–589, May, 1991.
Mareels I. M. Y., "Dynamic models and discrete event simulation, by W. Delaney and E. Vaccari" (Book review), Automatica **27**, 3, pp. 589–590, May, 1991.

## Volume 27, Issue 4 — July, 1991

Hägglund T., K. J. Åström, "Industrial adaptive controllers based on frequency response techniques" (Regular paper), Automatica **27**, 4, pp. 599–609, July, 1991.
Dion J. M., L. Dugard, A. Franco, N. M. Tri, D. Rey' "MIMO adaptive constrained predictive control case study: an environmental test chamber" (Regular paper), Automatica **27**, 4, pp. 611–626, July, 1991.
Jacobs O. R. L., D. J. Ballance, J. W. Horwood, "Fishery management as a problem in feedback control" (Regular paper), Automatica **27**, 4, pp. 627–639, July, 1991.
Krogh B. H., L. E. Holloway, "Synthesis of feedback control logic for discrete manufacturing systems" (Regular paper), Automatica **27**, 4, pp. 641–651, July, 1991.
Ferretti G., C. Maffezzoni, R. Scattolini, "Recursive estimation of time delay in sampled systems" (Regular paper), Automatica **27**, 4, pp. 653–661, July, 1991.
Mäkilä P. M., "On identification of stable systems and optimal approximation" (Regular paper), Automatica **27**, 4, pp. 663–676, July, 1991.
Logemann H., "Circle criteria, small-gain conditions and internal stability for infinite-dimensional systems" (Regular paper), Automatica **27**, 4, pp. 677–690, July, 1991.

Gomide F. A., J. R. Cardarelli, K. Tarvainen, "Large scale systems with multiple objectives: an interactive negotiation procedure" (Brief paper), Automatica **27**, 4, pp. 691–697, July, 1991.

Leung G. M. H., T. P. Perry, B. A. Francis, "Performance analysis of sampled-data control systems" (Brief paper), Automatica **27**, 4, pp. 699–704, July, 1991.

Ackermann J. E., Han Zhong Hu, "Robustness of sampled-data control systems with uncertain physical plant parameters" (Brief paper), Automatica **27**, 4, pp. 705–710, July, 1991.

Rotstein H., R. Sanchez Peña, J. Bandoni, A. Desages, J. Romagnoli' "Robust characteristic polynomial assignment" (Brief paper), Automatica **27**, 4, pp. 711–715, July, 1991.

España M. D., "Intermittent phenomena in adaptive systems: a case study" (Brief paper), Automatica **27**, 4, pp. 717–720, July, 1991.

Petkovski Dj., N. Harkara, Z. Gajic, "Fast suboptimal solution to the static output control problem of linear singularly perturbed systems" (Brief paper), Automatica **27**, 4, pp. 721–724, July, 1991.

Elshafei A.-L., G. Dumont, A. Elnaggar, "Perturbation analysis of GPC with one-step control horizon" (Brief paper), Automatica **27**, 4, pp. 725–728, July, 1991.

Sugie T., T. Ono, "An iterative learning control law for dynamical systems" (Brief paper), Automatica **27**, 4, pp. 729–732, July, 1991.

Yeung L. F., "Optimal input-output variable assignments for multivariable systems" (Brief paper), Automatica **27**, 4, pp. 733–738, July, 1991.

Fu Minyue, A. W. Olbrot, M. P. Polis, "The edge theorem and graphical tests for robust stability of neutral time-delay systems" (Brief paper), Automatica **27**, 4, pp. 739–741, July, 1991.

Berger A. W., "Market-clearing prices in coupled, dynamic systems" (Brief paper), Automatica **27**, 4, pp. 743–747, July, 1991.

Engell S., "Robust multivariable feedback control, by J. Lunze" (Book review), Automatica **27**, 4, pp. 749–750, July, 1991.

Kwakernaak H., "Optimale lineare Regelung, by S. Engell" (Book review), Automatica **27**, 4, pp. 750–751, July, 1991.

## Volume 27, Issue 5 — September, 1991

Tan P. C., C. S. Berger, K. P. Dabke, R. G. Mein, "Recursive identification and adaptive prediction of wastewater flows" (Regular paper), Automatica **27**, 5, pp. 761–768, September, 1991.

Barros P. R., I. M. Y. Mareels, "Nonlinear averaging analysis of the incremental pole placement adaptive controller" (Regular paper), Automatica **27**, 5, pp. 769–782, September, 1991.

Williamson G. A., C. R. Johnson, Jr., B. D. O. Anderson, "Locally robust identification of linear systems containing unknown gain elements with application to adapted IIR lattice models" (Regular paper), Automatica **27**, 5, pp. 783–798, September, 1991.

Chisci L., G. Zappa, "A systolic architecture for iterative LQ optimization" (Regular paper), Automatica **27**, 5, pp. 799–810, September, 1991.

Englehart M. J., M. C. Smith, "A four-block problem for $H_\infty$ design: properties and applications" (Regular paper), Automatica **27**, 5, pp. 811–818, September, 1991.

Kouvaritakis B., J. A. Rossiter, "Bicausal representations and multivariable generalized predictive control" (Regular paper), Automatica **27**, 5, pp. 819–828, September, 1991.

Ilchmann A., "Robust adaptive stabilization of discrete-time first-order systems" (Regular paper), Automatica **27**, 5, pp. 829–835, September, 1991.

Rao H. R., "An information and preference theory approach to a discrete resource allocation problem" (Regular paper), Automatica **27**, 5, pp. 837–843, September, 1991.

Wu Qing Hua, B. W. Hogg, "Laboratory evaluation of adaptive controllers for synchronous generators" (Brief paper), Automatica **27**, 5, pp. 845–852, September, 1991.

Chang Liang-Wei, "A MIMO sliding control with a first-order plus integral sliding condition" (Brief paper), Automatica **27**, 5, pp. 853–858, September, 1991.

Canudas de Wit C., J.-J. E. Slotine, "Sliding observers for robot manipulators" (Brief paper), Automatica **27**, 5, pp. 859–864, September, 1991.

Pan Jianhua, J. van de Vegte, "Computer-aided design of control systems using nonparametric models" (Brief paper), Automatica **27**, 5, pp. 865–868, September, 1991.

Sule V. R., V. V. Athani, "Directional sensitivity tradeoffs in multivariable feedback systems" (Brief paper), Automatica **27**, 5, pp. 869–872, September, 1991.

Gu Keqin, Ye Hwa Chen, "Linear control guaranteeing stability of uncertain systems via orthogonal decomposition" (Brief paper), Automatica **27**, 5, pp. 873–876, September, 1991.

Rech C., R. Perret, "About structural controllability of interconnected dynamical systems" (Brief paper), Automatica **27**, 5, pp. 877–881, September, 1991.

Descusse J., "Block noninteracting control with (non)regular static state feedback: a complete solution" (Brief paper), Automatica **27**, 5, pp. 883–886, September, 1991.

Wang Qing-Guo, "Necessary and sufficient conditions for stability of a matrix polytope with normal vertex matrices" (Technical Communiqué), Automatica **27**, 5, pp. 887–888, September, 1991.

Logemann H., "Multivariable feedback design, by J. M. Maciejowski" (Book review), Automatica **27**, 5, pp. 889–891, September, 1991.

Canudas de Wit C., "Control of partially-known dynamical systems, by A. A. Bahnasawi and M. S. Mahmoud" (Book review), Automatica **27**, 5, pp. 892–893, September, 1991.

## Volume 27, Issue 6 — November, 1991

Martin T., J. Kivinen, J. E. Rijnsdorp, M. G. Rodd, W. B. Rouse' "Appropriate automation — integrating technical, human, organizational, economic and cultural factors" (Regular paper), Automatica **27**, 6, pp. 901–917, November, 1991.

Larsson J. E., P. Persson, "An expert system interface for an identification program" (Regular paper), Automatica **27**, 6, pp. 919–930, November, 1991.

Bayard D. S., F. Y. Hadaegh, Y. Yam, R. E. Scheid, E. Mettler' M. H. Milman, "Automated on-orbit frequency domain identification for large space structures" (Regular paper), Automatica **27**, 6, pp. 931–946, November, 1991.

Lenz K., H. Özbay, A. Tannenbaum, J. Turi, B. Morton' "Frequency domain analysis and robust control design for an ideal flexible beam" (Regular paper), Automatica **27**, 6, pp. 947–961, November, 1991.

Chen Tongwen, B. A. Francis, "Linear time-varying $\mathcal{H}_2$ -optimal control of sampled-data systems" (Regular paper), Automatica **27**, 6, pp. 963–974, November, 1991.

Nwokah O. D. I., R. Perez, "On multivariable stability in the gain space" (Regular paper), Automatica **27**, 6, pp. 975–983, November, 1991.

Kuijper M., J. M. Schumacher, "Minimality of descriptor representations under external equivalence" (Regular paper), Automatica **27**, 6, pp. 985–995, November, 1991.

Milanese M., A. Vicino, "Optimal estimation theory for dynamic systems with set membership uncertainty: an overview" (Regular paper), Automatica **27**, 6, pp. 997–1009,

November, 1991.
Shima T., "New overlapping coordination methodologies for large-scale optimization problems" (Regular paper), Automatica **27**, 6, pp. 1011–1024, November, 1991.
Gajic Z., Xue-Min Shen, "Study of the discrete singularly perturbed linear-quadratic control problem by a bilinear transformation" (Brief paper), Automatica **27**, 6, pp. 1025–1028, November, 1991.
Pierre D. A., "Properties of a discrete-time enhanced linear-quadratic controller" (Brief paper), Automatica **27**, 6, pp. 1029–1034, November, 1991.
Azevedo da Silveira M., G. O. Corrêa, "On the parametrization of solutions to the servomechanism problem" (Brief paper), Automatica **27**, 6, pp. 1035–1038, November, 1991.
Tadmor G., "Uncertain feedback loops and robustness in general linear systems" (Brief paper), Automatica **27**, 6, pp. 1039–1042, November, 1991.
Hill D. J., "A generalization of the small-gain theorem for nonlinear feedback systems" (Brief paper), Automatica **27**, 6, pp. 1043–1045, November, 1991.
Pandolfi L., "Dynamic stabilization of systems with input delays" (Brief paper), Automatica **27**, 6, pp. 1047–1050, November, 1991.
Sinha P. K., G. Pech, H. A. Abbassi, "Digital control of an electromagnetic suspension system using the TMS-32020 signal processor" (Technical Communiqué), Automatica **27**, 6, pp. 1051–1054, November, 1991.
Nakamori S., "A new prediction algorithm using covariance information in linear continuous systems" (Technical Communiqué), Automatica **27**, 6, pp. 1055–1058, November, 1991.
Ni Mao-Lin, "A note on the maximum solutions of Riccati equations" (Technical Communiqué), Automatica **27**, 6, pp. 1059–1060, November, 1991.
Ramar K., K. K. Appukuttan, "Pole assignment for multi-input multi-output systems using output feedback" (Technical Communiqué), Automatica **27**, 6, pp. 1061–1062, November, 1991.
Mäkilä P. M., "A bicriteria stationary LQ control problem" (Technical Communiqué), Automatica **27**, 6, pp. 1063–1064, November, 1991.
Nihtilä M. T., "Analysis and synthesis of time delay systems, by H. Gorechi, S. Fuksa, P. Grabowski and A. Korytowski" (Book review), Automatica **27**, 6, pp. 1065–1067, November, 1991.
Norton J. P., "System identification and control design using P.I.M. + software, by I. D. Landau" (Book review), Automatica **27**, 6, pp. 1068–1069, November, 1991.

## Volume 28, Issue 1 — January, 1992

Åström K. J., C. C. Hang, P. Persson, W. K. Ho, "Towards intelligent PID control" (Regular paper), Automatica **28**, 1, pp. 1–9, January, 1992.
Golden M. P., B. E. Ydstie, "Small amplitude chaos and ergodicity in adaptive control" (Regular paper), Automatica **28**, 1, pp. 11–25, January, 1992.
Lozano R., "Singularity-free adaptive pole-placement without resorting to persistency of excitation: detailed analysis for first order systems" (Regular paper), Automatica **28**, 1, pp. 27–33, January, 1992.
Al-Rahmani H. M., G. F. Franklin, "Multirate control: a new approach" (Regular paper), Automatica **28**, 1, pp. 35–44, January, 1992.
Toivonen H. T., "Sampled-data control of continuous-time systems with an $H_\infty$ optimality criterion" (Regular paper), Automatica **28**, 1, pp. 45–54, January, 1992.
Hara S., T. Sugie, R. Kondo, "$H_\infty$ control problem with $j\omega$ -axis zeros" (Regular paper), Automatica **28**, 1, pp. 55–70, January, 1992.
Tesi A., A. Vicino, G. Zappa, "Clockwise property of the Nyquist plot with implications for absolute stability" (Regular paper), Automatica **28**, 1, pp. 71–80, January, 1992.
Yamamoto Y., S. Hara, "Internal and external stability and robust stability condition for a class of infinite-dimensional systems" (Regular paper), Automatica **28**, 1, pp. 81–93, January, 1992.
Srikant R., T. Başar, "Sequential decomposition and policy iteration schemes for $M$ -player games with partial weak coupling" (Regular paper), Automatica **28**, 1, pp. 95–105, January, 1992.
Jalali A., M. J. Ferguson, "Computationally efficient algorithms for on-line optimization of Markov decision processes" (Regular paper), Automatica **28**, 1, pp. 107–118, January, 1992.
Lewis F. L., "A tutorial on the geometric analysis of linear time-invariant implicit systems" (Regular paper), Automatica **28**, 1, pp. 119–137, January, 1992.
Sznaier M., M. J. Damborg, "An analog 'neural net' based suboptimal controller for constrained discrete-time linear systems" (Brief paper), Automatica **28**, 1, pp. 139–144, January, 1992.
Elmali H., N. Olgac, "Robust output tracking control of nonlinear MIMO systems via sliding mode technique" (Brief paper), Automatica **28**, 1, pp. 145–151, January, 1992.
Frangos C., J. A. Snyman, "The application of parameter optimization techniques to linear optimal control system design" (Brief paper), Automatica **28**, 1, pp. 153–157, January, 1992.
Skataric D., Z. Gajic, "Linear control of nearly singularly perturbed hydropower plants" (Brief paper), Automatica **28**, 1, pp. 159–163, January, 1992.
Jiaxin Cheng, Ph. Howlett, "Application of critical velocities to the minimisation of fuel consumption in the control of trains" (Brief paper), Automatica **28**, 1, pp. 165–169, January, 1992.
Keller J. P., D. Bonvin, "Selection of input and output variables as a model reduction problem" (Brief paper), Automatica **28**, 1, pp. 171–177, January, 1992.
Ortega R., G. Escobar, F. Garcia, "To tune or not to tune?: a monitoring procedure to decide" (Brief paper), Automatica **28**, 1, pp. 179–184, January, 1992.
Hsu Liu, M. Chan, A. Bhaya, "Automated synthesis of decentralized tuning regulators for systems with measurable DC gain" (Brief paper), Automatica **28**, 1, pp. 185–191, January, 1992.
Kowalczuk Z., "Competitive identification for self-tuning control: robust estimation design and simulation experiments" (Brief paper), Automatica **28**, 1, pp. 193–201, January, 1992.
Ruusunen J., "Intertemporal electricity exchange through barter" (Brief paper), Automatica **28**, 1, pp. 203–207, January, 1992.
Mosca E., L. Giarré, "A polynomial approach to the MIMO LQ servo and disturbance rejection problems" (Brief paper), Automatica **28**, 1, pp. 209–213, January, 1992.
Saif M., Yuping Guan, "Decentralized state estimation in large-scale interconnected dynamical systems" (Brief paper), Automatica **28**, 1, pp. 215–219, January, 1992.
Campi M., "On the convergence of minimum-variance directional-forgetting adaptive control scheme" (Brief paper), Automatica **28**, 1, pp. 221–225, January, 1992.
Alessandro P. d', E. De Santis, "Reachability in input constrained discrete-time linear systems" (Brief paper), Automatica **28**, 1, pp. 227–229, January, 1992.
Rodd M. G., "Real-time software for control: program

examples in C, by D. M. Auslander and Cheng H. Tham" (Book review), Automatica **28**, 1, pp. 231–232, January, 1992.

## Volume 28, Issue 2 — March, 1992

Axelby G. S., "Automatica editorial staff changes — with additions" (Editorial), Automatica **28**, 2, p. 240, March, 1992.

"Call for papers Automatica special issue on 'statistical signal processing and control'" (Editorial), Automatica **28**, 2, p. 241, March, 1992.

Waard H. de, W. L. de Koning, "Optimal control of the wafer temperatures in diffusion / LPCVD reactors" (Regular paper), Automatica **28**, 2, pp. 243–253, March, 1992.

Garcia A., M. Hubbard, J. J. De Vries, "Open channel transient flow control by discrete time LQR methods" (Regular paper), Automatica **28**, 2, pp. 255–264, March, 1992.

Stepanenko Y., Jing Yuan, "Robust adaptive control of a class of nonlinear mechanical systems with unbounded and fast-varying uncertainties" (Regular paper), Automatica **28**, 2, pp. 265–276, March, 1992.

Krause J. M., G. Stein, P. P. Khargonekar, "Sufficient conditions for robust performance of adaptive controllers with general uncertainty structure" (Regular paper), Automatica **28**, 2, pp. 277–288, March, 1992.

Hui S., S. H. Żak, "robust control synthesis for uncertain/nonlinear dynamical systems" (Regular paper), Automatica **28**, 2, pp. 289–298, March, 1992.

Gu Guoxiang, P. P. Khargonekar, "A class of algorithms for identification in $\mathcal{H}_\infty$" (Regular paper), Automatica **28**, 2, pp. 299–312, March, 1992.

Kulhavý R., "Recursive nonlinear estimation: geometry of a space of posterior densities" (Regular paper), Automatica **28**, 2, pp. 313–323, March, 1992.

Heij C., "Exact modelling and identifiability of linear systems" (Regular paper), Automatica **28**, 2, pp. 325–344, March, 1992.

Lewis F. L., "A review of 2-D implicit systems" (Regular paper), Automatica **28**, 2, pp. 345–354, March, 1992.

Johannsen G., "Towards new quality of automation in complex man-machine systems" (Regular paper), Automatica **28**, 2, pp. 355–373, March, 1992.

Wagner J., R. Shoureshi, "A robust failure diagnosis system for thermofluid processes" (Brief paper), Automatica **28**, 2, pp. 375–381, March, 1992.

Hemami A., M. G. Mehrabi, R. M. H. Cheng, "Synthesis of an optimal control law for path tracking in mobile robots" (Brief paper), Automatica **28**, 2, pp. 383–387, March, 1992.

Kyriakopoulos K. J., G. N. Saridis, "Distance estimation and collision prediction for on-line robotic motion planning" (Brief paper), Automatica **28**, 2, pp. 389–394, March, 1992.

Dhingra J. S., R. L. Moose, H. VanLandingham, T. A. Lauzon, "A computationally efficient technique for state estimation of nonlinear systems" (Brief paper), Automatica **28**, 2, pp. 395–399, March, 1992.

Mosca E., J. M. Lemos, "A semi-finite horizon LQ self-tuning regulator for ARMAX plants based on RLS" (Brief paper), Automatica **28**, 2, pp. 401–406, March, 1992.

Casalino G., R. Minciardi, "Further results on implicit models with application to LQ adaptive optimization" (Brief paper), Automatica **28**, 2, pp. 407–410, March, 1992.

Wang Qing-Guo, "Decoupling with internal stability for unity output feedback systems" (Brief paper), Automatica **28**, 2, pp. 411–415, March, 1992.

Yan Wei-Yong, B. D. O. Anderson, R. R. Bitmead, "The combined sensitivity and phase margin problem" (Brief paper), Automatica **28**, 2, pp. 417–421, March, 1992.

Kučera V., "Model matching of descriptor systems by proportional state feedback" (Brief paper), Automatica **28**, 2, pp. 423–425, March, 1992.

Paraskevopoulos P. N., F. N. Koumboulis, K. G. Tzierakis, "Disturbance rejection of left-invertible systems" (Brief paper), Automatica **28**, 2, pp. 427–430, March, 1992.

Bloch A. M., "Stabilizability of nonholonomic control systems" (Brief paper), Automatica **28**, 2, pp. 431–435, March, 1992.

Chien Chang-Ju, Li-Chen Fu, "A new approach to model reference control for a class of arbitrary fast time-varying unknown plants" (Technical Communiqué), Automatica **28**, 2, pp. 437–440, March, 1992.

McAvoy T. J., "Contemplative stance for chemical process control." (IFAC report), Automatica **28**, 2, pp. 441–442, March, 1992.

Harris C. J., "Fuzzy control & fuzzy systems, by W. Pedrycz" (Book review), Automatica **28**, 2, p. 443, March, 1992.

Bányász Cs., "Continuous-time self-tuning control volume II — implementation, by P. J. Gawthrop" (Book review), Automatica **28**, 2, pp. 444–445, March, 1992.

Wellstead P., "Dynamic modeling and control of engineering systems, by J. L. Shearer and B. T. Kulakowski" (Book review), Automatica **28**, 2, pp. 445–446, March, 1992.

## Volume 28, Issue 3 — May, 1992

Draijer W., M. Steinbuch, O. H. Bosgra, "Adaptive control of the radial servo system of a compact disc player" (Regular paper), Automatica **28**, 3, pp. 455–462, May, 1992.

Tebbutt C. D., "An expert system for multivariable controller design" (Regular paper), Automatica **28**, 3, pp. 463–471, May, 1992.

Pang G. K. H., "A knowledge environment for an interactive control system design package" (Regular paper), Automatica **28**, 3, pp. 473–491, May, 1992.

Chen B. M., A. Saberi, P. Sannuti, "Necessary and sufficient conditions for a nonminimum phase plant to have a recoverable target loop — a stable compensator design for LTR" (Regular paper), Automatica **28**, 3, pp. 493–507, May, 1992.

Saeki M., "$H^\infty$ / LTR procedure with specified degree of recovery" (Regular paper), Automatica **28**, 3, pp. 509–517, May, 1992.

Tsai Mi Ching, E. J. M. Geddes, I. Postlethwaite, "Pole-zero cancellations and closed-loop properties of an $H^\infty$ mixed sensitivity design problem" (Regular paper), Automatica **28**, 3, pp. 519–530, May, 1992.

Genesio R., A. Tesi, "Harmonic balance methods for the analysis of chaotic dynamics in nonlinear systems" (Regular paper), Automatica **28**, 3, pp. 531–548, May, 1992.

Kim S., S. M. Meerkov, T. Runolfsson, "Aiming control: residence probability and $(D, T)$-stability" (Regular paper), Automatica **28**, 3, pp. 549–555, May, 1992.

Kim S., S. M. Meerkov, T. Runolfsson, "Aiming control: design of residence probability controllers" (Regular paper), Automatica **28**, 3, pp. 557–564, May, 1992.

Özveren C. M., A. S. Willsky, "Aggregation and multi-level control in discrete event dynamic systems" (Regular paper), Automatica **28**, 3, pp. 565–577, May, 1992.

Qu Zhihua, D. M. Dawson, J. F. Dorsey, "Exponentially stable trajectory following of robotic manipulators under a class of adaptive controls" (Brief paper), Automatica **28**, 3, pp. 579–586, May, 1992.

Schei T. S., "A method for closed loop automatic tuning of PID controllers" (Brief paper), Automatica **28**, 3, pp. 587–591, May, 1992.

Mosca E., J. M. Lemos, T. F. Mendonça, P. Nistri, "Adaptive predictive control with mean-square input constraint" (Brief paper), Automatica **28**, 3, pp. 593–597, May, 1992.

Ishihara T., Hai-Jiao Guo, H. Takeda, "A design of discrete-time integral controllers with computation delays via loop transfer recovery" (Brief paper), Automatica **28**, 3, pp. 599–603, May, 1992.

Castelan E. B., J.-C. Hennet, "Eigenstructure assignment for state constrained linear continuous time systems" (Brief paper), Automatica **28**, 3, pp. 605–611, May, 1992.

Jalali S. A., R. Jordan, R. D. L. Mackie, "Measurement of the parameters of all-pole transfer functions using shifted Hermite modulating functions" (Brief paper), Automatica **28**, 3, pp. 613–616, May, 1992.

Liu Yi, K. L. Teo, "Convergence rate for an approximation approach to $H_\infty$ -norm optimization problems with an application to controller order reduction" (Brief paper), Automatica **28**, 3, pp. 617–621, May, 1992.

Ichikawa K., R. Ortega, "On stabilization of nonlinear systems with enlarged domain of attraction" (Brief paper), Automatica **28**, 3, pp. 623–626, May, 1992.

Stoorvogel A. A., "The singular $H_2$ control problem" (Brief paper), Automatica **28**, 3, pp. 627–631, May, 1992.

Kuijper M., "Descriptor representations without direct feedthrough term" (Brief paper), Automatica **28**, 3, pp. 633–637, May, 1992.

Duan Guang Ren, "Solution to matrix equation $AV + BW = EVF$ and eigenstructure assignment for descriptor systems" (Brief paper), Automatica **28**, 3, pp. 639–643, May, 1992.

Perdon A. M., G. Conte, S. Longhi, "Invertibility and inversion of linear periodic systems" (Brief paper), Automatica **28**, 3, pp. 645–648, May, 1992.

Zagalak P., "Singular control systems, by L. Dai" (Book review), Automatica **28**, 3, pp. 649–650, May, 1992.

Dumortier F., "Control and dynamic systems, by C. T. Leondes" (Book review), Automatica **28**, 3, pp. 650–652, May, 1992.

Ley F., "Programmable logic controllers — architecture and applications, by G. Michel" (Book review), Automatica **28**, 3, pp. 652–653, May, 1992.

## Volume 28, Issue 4 — July, 1992

Hauser J., S. Sastry, G. Meyer, "Nonlinear control design for slightly non-minimum phase systems: application to V/STOL aircraft" (Regular paper), Automatica **28**, 4, pp. 665–679, July, 1992.

Mareels I. M. Y., H. B. Penfold, R. J. Evans, "Controlling nonlinear time-varying systems via Euler approximations" (Regular paper), Automatica **28**, 4, pp. 681–696, July, 1992.

Demircioğlu H., P. J. Gawthrop, "Multivariable continuous-time generalized predictive control (MCGPC)" (Regular paper), Automatica **28**, 4, pp. 697–713, July, 1992.

Chen Ye Hwa, "Adaptive robust control of uncertain systems with measurement noise" (Regular paper), Automatica **28**, 4, pp. 715–728, July, 1992.

Wen J. T., K. Kreutz-Delgado, "Motion and force control of multiple robotic manipulators" (Regular paper), Automatica **28**, 4, pp. 729–743, July, 1992.

Bloch A. M., P. S. Krishnaprasad, J. E. Marsden, G. Sánchez De Alvarez, "Stabilization of rigid body dynamics by internal and external torques" (Regular paper), Automatica **28**, 4, pp. 745–756, July, 1992.

Callier F. M., J. Winkin, "LQ-optimal control of infinite-dimensional systems by spectral factorization" (Regular paper), Automatica **28**, 4, pp. 757–770, July, 1992.

Giannakis G. B., A. Swami, "Identifiability of general ARMA processes using linear cumulant-based estimators" (Regular paper), Automatica **28**, 4, pp. 771–779, July, 1992.

Pajunen G., "Adaptive control of Wiener type nonlinear systems" (Brief paper), Automatica **28**, 4, pp. 781–785, July, 1992.

Marino R., P. Tomei, "Observer-based adaptive stabilization for a class of non-linear systems" (Brief paper), Automatica **28**, 4, pp. 787–793, July, 1992.

Brogliato B., A. Trofino-Neto, R. Lozano, "Robust adaptive control of a class of nonlinear first order systems" (Brief paper), Automatica **28**, 4, pp. 795–801, July, 1992.

Tao Gang, "On robust adaptive control of robot manipulators" (Brief paper), Automatica **28**, 4, pp. 803–807, July, 1992.

Han M. C., Ye Hwa Chen, "Polynomial robust control design for uncertain systems" (Brief paper), Automatica **28**, 4, pp. 809–814, July, 1992.

Agamennoni O., E. Paolini, A. Desages, "On robust stability analysis of a control system using Laguerre series" (Brief paper), Automatica **28**, 4, pp. 815–818, July, 1992.

Khammash M., M. Dahleh, "Time-varying control and the robust performance of systems with structured norm-bounded perturbations" (Brief paper), Automatica **28**, 4, pp. 819–821, July, 1992.

Toivonen H. T., "Sampled-data $H_\infty$ optimal control of time-varying systems" (Brief paper), Automatica **28**, 4, pp. 823–826, July, 1992.

Obradovic D., L. Valavani, "Stability and performance in the presence of magnitude bounded real uncertainty: Riccati equation based state space approaches" (Brief paper), Automatica **28**, 4, pp. 827–830, July, 1992.

Gawthrop P. J., R. W. Jones, S. A. MacKenzie, "Identification of partially-known systems" (Brief paper), Automatica **28**, 4, pp. 831–836, July, 1992.

Marquez H. J., C. P. Diduch, "Sensitivity of failure detection using generalized observers" (Brief paper), Automatica **28**, 4, pp. 837–840, July, 1992.

Chung Tae-Sang, Chia-Ju Wu, "A computationally efficient numerical algorithm for the minimum-time control problem of continuous systems" (Brief paper), Automatica **28**, 4, pp. 841–847, July, 1992.

Brockhaus R., "Automatic flight control systems series in system on control engineering, by D. McLean" (Book review), Automatica **28**, 4, pp. 849–850, July, 1992.

Tan Shaohua, "Feedback control of dynamic systems, by G. Franklin, J. D. Powell and A. Emani-Naeini" (Book review), Automatica **28**, 4, pp. 850–851, July, 1992.

Kanoh H., "Nonlinear systems vol. 1: dynamics and control; vol. 2: applications to bilinear control, by R. R. Mohler" (Book review), Automatica **28**, 4, pp. 852–853, July, 1992.

## Volume 28, Issue 5 — September, 1992

Axelby G. S., P. C. Parks, "Lyapunov centenary" (Editorial), Automatica **28**, 5, pp. 863–864, September, 1992.

Shcherbakov P. S., "Alexander Mikhailovitch Lyapunov: on the centenary of his doctoral dissertation on stability of motion" (Regular paper), Automatica **28**, 5, pp. 865–871, September, 1992.

Dochain D., J. P. Babary, N. Tali-Maamar, "Modelling and adaptive control of nonlinear distributed parameter bioreactors via orthogonal collocation" (Regular paper), Automatica **28**, 5, pp. 873–883, September, 1992.

Kamoun S., R. Malhamé, "Convergence characteristics of a maximum likelihood load model identification scheme" (Regular paper), Automatica **28**, 5, pp. 885–896, September, 1992.

Spanos J. T., M. H. Milman, D. L. Mingori, "A new algorithm for $L_2$ optimal model reduction" (Regular paper), Automatica **28**, 5, pp. 897–909, September, 1992.

Fu Li-Chen, "A new robust MRAC using variable structure design for relative degree two plants" (Regular paper), Automatica **28**, 5, pp. 911–925, September, 1992.

Du Xue Cheng, A. Brella, R. Longchamp, "Fast algorithm of

Chandrasekhar type for ARMA model identification" (Regular paper), Automatica **28**, 5, pp. 927–934, September, 1992.

Kinnaert M., V. Blondel, "Discrete-time pole placement with stable controller" (Regular paper), Automatica **28**, 5, pp. 935–943, September, 1992.

Qiu Li, E. J. Davison, "A unified approach for the stability robustness of polynomials in a convex set" (Regular paper), Automatica **28**, 5, pp. 945–959, September, 1992.

Ben-Hanan U., K. Peleg, P.-O. Gutman, "Classification of fruits by a Boltzmann perceptron neural network" (Brief paper), Automatica **28**, 5, pp. 961–968, September, 1992.

Chang Yau-Zen, R. W. Daniel, "On the adaptive control of flexible joint robots" (Brief paper), Automatica **28**, 5, pp. 969–974, September, 1992.

Gao Long, Lin Chen, Yushun Fan, Haiwu Ma, "A nonlinear control design for power systems" (Brief paper), Automatica **28**, 5, pp. 975–979, September, 1992.

Phatak M. S., S. S. Keerthi, "A homotopy approach for stabilizing single-input systems with control structure constraints" (Brief paper), Automatica **28**, 5, pp. 981–987, September, 1992.

Hovd M., S. Skogestad, "Simple frequency-dependent tools for control system analysis, structure selection and design" (Brief paper), Automatica **28**, 5, pp. 989–996, September, 1992.

Chiu Min-Sen, Y. Arkun, "A methodology for sequential design of robust decentralized control systems" (Brief paper), Automatica **28**, 5, pp. 997–1001, September, 1992.

Hippe P., "Design of MIMO compensators for systems with unmeasurable disturbances: the polynomial approach" (Brief paper), Automatica **28**, 5, pp. 1003–1009, September, 1992.

Raucent B., G. Campion, G. Bastin, J. C. Samin, P. Y. Willems' "Identification of the barycentric parameters of robot manipulators from external measurements" (Brief paper), Automatica **28**, 5, pp. 1011–1016, September, 1992.

Yaniv O., "Synthesis of uncertain MIMO feedback systems for gain and phase margin at different channel breaking points" (Brief paper), Automatica **28**, 5, pp. 1017–1020, September, 1992.

Oldak S., I. Horowitz, A. Shapiro, "the sensor noise problem in dithered feedback systems" (Brief paper), Automatica **28**, 5, pp. 1021–1026, September, 1992.

Parks P. C., J. Militzer, "A comparison of five algorithms for the training of CMAC memories for learning control systems" (Brief paper), Automatica **28**, 5, pp. 1027–1035, September, 1992.

Xiaoping Liu, "Output regulation of strongly coupled symmetric composite systems" (Brief paper), Automatica **28**, 5, pp. 1037–1041, September, 1992.

Piechottka U., P. M. Frank, "Controllability of bilinear systems" (Brief paper), Automatica **28**, 5, pp. 1043–1045, September, 1992.

Hof P. M. J. van den, D. K. de Vries, P. Schoen, "Delay structure conditions for identifiability of closed loop systems" (Brief paper), Automatica **28**, 5, pp. 1047–1050, September, 1992.

Chen B. M., A. Saberi, P. Sannuti, "On blocking zeros and strong stabilizability of linear multivariable systems" (Brief paper), Automatica **28**, 5, pp. 1051–1055, September, 1992.

Samba S., J. C. Vivalda, "Global stabilization of a class of quadratic systems" (Brief paper), Automatica **28**, 5, pp. 1057–1061, September, 1992.

Chou Jyh-Horng, Shinn-Jang Ho, Ing-Rong Horng, "Robustness of disk-stability for perturbed large-scale systems" (Technical Communiqué), Automatica **28**, 5, pp. 1063–1066, September, 1992.

Sinha P. K., "Real-time microcomputer control of industrial processes, by S. G. Tzafestas and J. K. Pal" (Book review), Automatica **28**, 5, pp. 1067–1068, September, 1992.

Kučera V., "Optimal control: linear quadratic methods, by B. D. O. Anderson and J. B. Moore" (Book review), Automatica **28**, 5, pp. 1068–1069, September, 1992.

Natke H. G., "System identification, by T. Söderström and P. Stoica" (Book review), Automatica **28**, 5, pp. 1069–1071, September, 1992.

Borkar V. S., "Weak convergence methods and singularly perturbed stochastic control and filtering problems, by H. J. Kushner" (Book review), Automatica **28**, 5, pp. 1071–1072, September, 1992.

Nijmeijer H., "Phase portraits of control dynamical systems, by A. G. Butkovskiy" (Book review), Automatica **28**, 5, pp. 1073–1074, September, 1992.

## Volume 28, Issue 6 — November, 1992

Hunt K. J., D. Sbarbaro, R. Żbikowski, P. J. Gawthrop, "Neural networks for control systems — a survey" (Survey paper), Automatica **28**, 6, pp. 1083–1112, November, 1992.

Martin R. B., "Optimal control drug scheduling of cancer chemotherapy" (Regular paper), Automatica **28**, 6, pp. 1113–1123, November, 1992.

Graettinger T. J., B. H. Krogh, "On the computation of reference signal constraints for guaranteed tracking performance" (Regular paper), Automatica **28**, 6, pp. 1125–1141, November, 1992.

Wen Changyun, D. J. Hill, "Global boundedness of discrete-time adaptive control just using estimator projection" (Regular paper), Automatica **28**, 6, pp. 1143–1157, November, 1992.

Aeyels D., J. L. Willems, "Pole assignment for linear time-invariant systems by periodic memoryless output feedback" (Regular paper), Automatica **28**, 6, pp. 1159–1168, November, 1992.

Barmish B. R., H. I. Kang, "Extreme point results for robust stability of interval plants: beyond first order compensators" (Regular paper), Automatica **28**, 6, pp. 1169–1180, November, 1992.

Willis M. J., G. A. Montague, C. Di Massimo, M. T. Tham, A. J. Morris' "Artificial neural networks in process estimation and control" (Brief paper), Automatica **28**, 6, pp. 1181–1187, November, 1992.

M'Saad M., G. Sanchez, "Partial state reference model adaptive control of multivariable systems" (Brief paper), Automatica **28**, 6, pp. 1189–1197, November, 1992.

Zhou Meng Chu, F. DiCesare, D. L. Rudolph, "Design and implementation of a Petri net based supervisor for a flexible manufacturing system" (Brief paper), Automatica **28**, 6, pp. 1199–1208, November, 1992.

Shyu Kuo-Kai, Yao-Wen Tsai, Chee-Fai Yung, "A modified variable structure controller" (Brief paper), Automatica **28**, 6, pp. 1209–1213, November, 1992.

Kuc T.-Y., J. S. Lee, K. Nam, "An iterative learning control theory for a class of nonlinear dynamic systems" (Brief paper), Automatica **28**, 6, pp. 1215–1221, November, 1992.

Syrmos V. L., F. L. Lewis, "Robust eigenvalue assignment for generalized systems" (Brief paper), Automatica **28**, 6, pp. 1223–1228, November, 1992.

Mosca E., Jingxin Zhang, "Stable redesign of predictive control" (Brief paper), Automatica **28**, 6, pp. 1229–1233, November, 1992.

Kwon W. H., H. Choi, D. G. Byun, S. Noh, "Recursive solution of generalized predictive control and its equivalence to receding horizon tracking control" (Brief paper), Automatica **28**, 6, pp. 1235–1238, November, 1992.

Yan Weiyong, J. B. Moore, "A multiple controller structure and design strategy with stability analysis" (Brief paper),

Automatica **28**, 6, pp. 1239–1244, November, 1992.
Buckley J. J., "Universal fuzzy controllers" (Brief paper), Automatica **28**, 6, pp. 1245–1248, November, 1992.
Lin Shin-Yeu, "Complete decomposition algorithm for nonconvex separable optimization problems and applications" (Brief paper), Automatica **28**, 6, pp. 1249–1254, November, 1992.
Morgül Ö, "Dynamic boundary control of the Timoshenko beam" (Brief paper), Automatica **28**, 6, pp. 1255–1260, November, 1992.
Yen Nie-Zen, Yung-Chun Wu, "A multirate controller design of linear periodic time delay systems" (Brief paper), Automatica **28**, 6, pp. 1261–1266, November, 1992.
Sivashankar N., P. P. Khargonekar, "Induced norms for sampled-data systems" (Brief paper), Automatica **28**, 6, pp. 1267–1272, November, 1992.
Sommer G., "A contemplative stance on the automation of the mining, mineral, and metal processing industry (MMM)" (IFAC report), Automatica **28**, 6, pp. 1273–1278, November, 1992.
Verbruggen H. B., "Knowledge-based systems for industrial control, by J. McGhee, M. J. Grimble and P. Mowforth" (Book review), Automatica **28**, 6, pp. 1279–1284, November, 1992.
Schuppen J. H. van, "Jump linear systems in automatic control, by M. Mariton" (Book review), Automatica **28**, 6, pp. 1284–1285, November, 1992.
Daniel R. W., "Control of machines with friction, by B. Armstrong-Hélouvry" (Book review), Automatica **28**, 6, pp. 1285–1287, November, 1992.
Shin S., "Self-tuning systems control and signal processing, by R. E. Wellstead and M. B. Zarrop" (Book review), Automatica **28**, 6, pp. 1287–1288, November, 1992.
Motus L., "Temporal logic for real-time systems, by J. S. Ostroff" (Book review), Automatica **28**, 6, pp. 1288–1289, November, 1992.

## Volume 29, Issue 1 — January, 1993

Axelby G. S., "Introduction" (Editorial), Automatica **29**, 1, p. 1, January, 1993.
Kwakernaak H., "Special issue on robust control" (Editorial), Automatica **29**, 1, p. 3, January, 1993.
Barmish B. R., J. E. Ackermann, "In memoriam: Kehui Wei (1946–1992)" (Other), Automatica **29**, 1, pp. 5–6, January, 1993.
Tsulino T., T. Fujii, Kehui Wei, "On the connection between controllability and stabilizability of linear systems with structural uncertain parameters" (Regular paper), Automatica **29**, 1, pp. 7–12, January, 1993.
Barmish B. R., H. I. Kang, "A survey of extreme point results for robustness of control systems" (Regular paper), Automatica **29**, 1, pp. 13–35, January, 1993.
Dahleh M. A., H. Khammash, "Controller design for plants with structured uncertainty" (Regular paper), Automatica **29**, 1, pp. 37–56, January, 1993.
Kaminer I., P. P. Khargonekar, M. A. Rotea, "Mixed $\mathcal{H}_2/\mathcal{H}_\infty$ control for discrete-time systems via convex optimization" (Regular paper), Automatica **29**, 1, pp. 57–70, January, 1993.
Packard A., J. Doyle, "The complex structured singular value" (Regular paper), Automatica **29**, 1, pp. 71–109, January, 1993.
Chiang R. Y., M. G. Safonov, K. Haiges, K. Madden, J. Tekawy' "A fixed $H^\infty$ controller for a supermaneuverable fighter performing the Herbst maneuver" (Regular paper), Automatica **29**, 1, pp. 111–127, January, 1993.
Garg S., "Robust integrated flight/propulsion control design for a STOVL aircraft using $H$-infinity control design techniques" (Regular paper), Automatica **29**, 1, pp. 129–145, January, 1993.
Milanese M., G. Fiorio, S. Malan, "Robust performances control design for a high accuracy calibration device" (Regular paper), Automatica **29**, 1, pp. 147–156, January, 1993.
Limebeer D. J. N., E. M. Kasenally, J. D. Perkins, "On the design of robust two degree of freedom controllers" (Regular paper), Automatica **29**, 1, pp. 157–168, January, 1993.
Graselli O. M., S. Longhi, A. Tornambè, "Robust tracking and performance for multivariable systems under physical parameter uncertainties" (Regular paper), Automatica **29**, 1, pp. 169–179, January, 1993.
Marino R., P. Tomei, "Robust stabilization of feedback linearizable time-varying uncertain nonlinear systems" (Regular paper), Automatica **29**, 1, pp. 181–189, January, 1993.
Shamma J. S., Rongze Zhao, "Fading-memory feedback systems and robust stability" (Regular paper), Automatica **29**, 1, pp. 191–200, January, 1993.
Dorato P., R. Tempo, G. Muscato, "Bibliography on robust control" (Other), Automatica **29**, 1, pp. 201–213, January, 1993.
Kaesbauer D., "On robust stability of polynomials with polynomial parameter dependency: two/three parameter cases" (Brief paper), Automatica **29**, 1, pp. 215–217, January, 1993.
Lin Jong-Lick, I. Postlethwaite, Da-Wei Gu, "$\mu - K$ iteration: a new algorithm for $\mu$ -synthesis" (Brief paper), Automatica **29**, 1, pp. 219–224, January, 1993.
Peres P. L. D., J. C. Geromel, "$\mathcal{H}_2$ control for discrete-time systems optimality and robustness" (Brief paper), Automatica **29**, 1, pp. 225–228, January, 1993.
Ray L. R., R. F. Stengel, "A Monte Carlo approach to the analysis of control system robustness" (Brief paper), Automatica **29**, 1, pp. 229–236, January, 1993.
Yedavalli R. K., "Robust root clustering for linear uncertain systems using generalized Lyapunov theory" (Brief paper), Automatica **29**, 1, pp. 237–240, January, 1993.
Zeheb E., "Necessary and sufficient conditions for robust stability of discrete systems with coefficients depending continuously on two interval parameters" (Brief paper), Automatica **29**, 1, pp. 241–244, January, 1993.

## Volume 29, Issue 2 — March, 1993

Axelby G. S., "Editorial changes" (Editorial), Automatica **29**, 2, p. 253, March, 1993.
Kwakernaak H., "Robust control and $\mathcal{H}_\infty$ -optimization — tutorial paper" (Tutorial paper), Automatica **29**, 2, pp. 255–273, March, 1993.
Liu Gengshen, "Application of EKF technique to ship resistance measurement" (Regular paper), Automatica **29**, 2, pp. 275–283, March, 1993.
Tulleken H. J. A. F., "Grey-box modelling and identification using physical knowledge and Bayesian techniques" (Regular paper), Automatica **29**, 2, pp. 285–308, March, 1993.
Kyriakopoulos K. J., G. N. Saridis, "An integrated collision prediction and avoidance scheme for mobile robots in non-stationary environments" (Regular paper), Automatica **29**, 2, pp. 309–322, March, 1993.
Tao Gang, P. V. Kokotović, "Adaptive control of systems with backlash" (Regular paper), Automatica **29**, 2, pp. 323–335, March, 1993.
Qiu Li, E. J. Davison, "Performance limitations of non-minimum phase systems in the servomechanism problem" (Regular paper), Automatica **29**, 2, pp. 337–349,

March, 1993.
Zhang Zhihong, J. S. Freudenberg, "Discrete-time loop transfer recovery for systems with nonminimum phase zeros and time delays" (Regular paper), Automatica **29**, 2, pp. 351–363, March, 1993.
Yaniv O., Y. Chait, "Direct control design in sampled-data uncertain systems" (Regular paper), Automatica **29**, 2, pp. 365–372, March, 1993.
Rotea M. A., "The generalized $H_2$ control problem" (Regular paper), Automatica **29**, 2, pp. 373–385, March, 1993.
Corless M., F. Garofalo, L. Glielmo, "New results on composite control of singularly perturbed uncertain linear systems" (Regular paper), Automatica **29**, 2, pp. 387–400, March, 1993.
Pan Zigang, T. Başar, "$H^\infty$ -optimal control for singularly perturbed systems. Part I: perfect state measurements" (Regular paper), Automatica **29**, 2, pp. 401–423, March, 1993.
Halousková A., M. Kárný, I. Nagy, "Adaptive cross-direction control of paper basis weight" (Brief paper), Automatica **29**, 2, pp. 425–429, March, 1993.
Shen J. H., A. Ray, "Extended discrete-time LTR synthesis of delayed control systems" (Brief paper), Automatica **29**, 2, pp. 431–438, March, 1993.
Sznaier M., M. J. Damborg, "Heuristically enhanced feedback control of constrained systems: the minimum time case" (Brief paper), Automatica **29**, 2, pp. 439–444, March, 1993.
Sworder D. D., R. G. Hutchins, M. Kent, "Utility of imaging sensors in tracking systems" (Brief paper), Automatica **29**, 2, pp. 445–449, March, 1993.
Tang Yu, "Adaptive frequency response identification using the Lagrange filter" (Brief paper), Automatica **29**, 2, pp. 451–455, March, 1993.
Date R. A., Joe H. Chow, "A parametrization approach to optimal $H_2$ and $H_\infty$ decentralized control problems" (Brief paper), Automatica **29**, 2, pp. 457–463, March, 1993.
Fessas P., "On pole placement with decentralized static feedback" (Brief paper), Automatica **29**, 2, pp. 465–467, March, 1993.
Duan Guang-Ren, "Robust eigenstructure assignment via dynamical compensators" (Brief paper), Automatica **29**, 2, pp. 469–474, March, 1993.
Conte G., A. M. Perdon, "Robust disturbance decoupling problem for parameter dependent families of linear systems" (Brief paper), Automatica **29**, 2, pp. 475–478, March, 1993.
Li Yanlin, E. B. Lee, "Stability robustness characterization and related issues for control systems design" (Brief paper), Automatica **29**, 2, pp. 479–484, March, 1993.
Luo Jian San, A. Johnson, "Stability robustness of the continuous-time LQG system under plant perturbation and noise uncertainty" (Brief paper), Automatica **29**, 2, pp. 485–489, March, 1993.
Peres P. L. D., J. C. Geromel, J. Bernussou, "Quadratic stabilizability of linear uncertain systems in convex-bounded domains" (Brief paper), Automatica **29**, 2, pp. 491–493, March, 1993.
Proychev T. Ph., R. L. Mishkov, "Transformation on nonlinear systems in observer canonical form with reduced dependency on derivatives of the input" (Brief paper), Automatica **29**, 2, pp. 495–498, March, 1993.
Ying Hao, "A nonlinear fuzzy controller with linear control rules is the sum of a global two-dimensional multilevel relay and a local nonlinear proportional-integral controller" (Brief paper), Automatica **29**, 2, pp. 499–505, March, 1993.
Hunt K. J., M. Šebek, "Polynomial LQ optimization for the standard control structure: scalar solution" (Brief paper), Automatica **29**, 2, pp. 507–509, March, 1993.
Iftar A., "Decentralized estimation and control with overlapping input, state, and output decomposition" (Brief paper), Automatica **29**, 2, pp. 511–516, March, 1993.
Bittanti S., G. De Nicolao, "Spectral factorization of linear periodic systems with application to the optimal prediction of periodic ARMA models" (Brief paper), Automatica **29**, 2, pp. 517–522, March, 1993.
Sandberg I. W., L. Y. Xu, "Steady-state errors in discrete-time control systems" (Brief paper), Automatica **29**, 2, pp. 523–526, March, 1993.
Koumboulis F. N., P. N. Paraskevopoulos, "On the generic controllability of continuous generalized state-space systems" (Brief paper), Automatica **29**, 2, pp. 527–530, March, 1993.
Lasserre J. B., "Reachable, controllable sets and stabilizing control of constrained linear systems" (Brief paper), Automatica **29**, 2, pp. 531–536, March, 1993.
Rousan N. S., "Necessary and sufficient conditions for global optimality for linear discrete time systems" (Brief paper), Automatica **29**, 2, pp. 537–539, March, 1993.
Toola A., "The safety of process automation" (Brief paper), Automatica **29**, 2, pp. 541–548, March, 1993.
Kienitz K. H., "Controller design using fuzzy logic — a case study" (Brief paper), Automatica **29**, 2, pp. 549–554, March, 1993.
Dainson B. E., D. R. Lewin, "A non-conservative stability test for $2 \times 2$ MIMO linear systems under decentralized control" (Technical Communiqué), Automatica **29**, 2, pp. 555–557, March, 1993.
Kaiqi Xiong, "Comments on 'On absolute stability and the Aizerman conjecture'" (Technical Communiqué), Automatica **29**, 2, p. 559, March, 1993.
Grujić L. T., "Reply to 'Comments on 'On absolute stability and the Aizerman conjecture' '" (Technical Communiqué), Automatica **29**, 2, p. 561, March, 1993.
Hang C. C., K. J. Åström, W. K. Ho, "Relay auto-tuning in the presence of static load disturbance" (Technical Communiqué), Automatica **29**, 2, pp. 563–564, March, 1993.
Ojha P. C., "Vector Lyapunov functions and stability analysis of nonlinear systems, by V. Lakshmikantham, V. M. Matrosov and S. Sivasundaram" (Book review), Automatica **29**, 2, pp. 565–566, March, 1993.
Machacek M., "Control sensors and actuators, by C. W. de Silva" (Book review), Automatica **29**, 2, pp. 566–567, March, 1993.
Wittenmark B., "Adaptive filter theory, by S. Haykin" (Book review), Automatica **29**, 2, pp. 567–568, March, 1993.
Varga A., "Computational methods for linear control systems, by P. Hr. Petkov, N. D. Christov and M. M. Konstantinov" (Book review), Automatica **29**, 2, pp. 568–570, March, 1993.
Li Renhou, "Decentralized control of complex systems, by D. D. Siljak" (Book review), Automatica **29**, 2, pp. 570–571, March, 1993.

## Volume 29, Issue 3 — May, 1993

Axelby G. S., "On to new horizons" (Editorial), Automatica **29**, 3, pp. 587–588, May, 1993.
M'Saad M., L. Dugard, Sh. Hammad, "A suitable generalized predictive adaptive controller case study: control of a flexible arm" (Regular paper), Automatica **29**, 3, pp. 589–608, May, 1993.
Yuan Jing, Y. Stepanenko, "Composite adaptive control of flexible joint robots" (Regular paper), Automatica **29**, 3, pp. 609–619, May, 1993.
Ortega R., G. Espinoza, "Torque regulation of induction motors" (Regular paper), Automatica **29**, 3, pp. 621–633, May, 1993.
Mutoh Y., R. Ortega, "Interactor structure estimation for

adaptive control of discrete-time multivariable nondecouplable systems" (Regular paper), Automatica **29**, 3, pp. 635–647, May, 1993.
Van Overschee P., B. De Moor, "Subspace algorithms for the stochastic identification problem" (Regular paper), Automatica **29**, 3, pp. 649–660, May, 1993.
Sternad M., A. Ahlén, "Robust filtering and feedforward control based on probabilistic descriptions of model errors" (Regular paper), Automatica **29**, 3, pp. 661–679, May, 1993.
Mäkilä P. M., J. R. Partington, "Robust stabilization — BIBO stability, distance notions and robustness optimization" (Regular paper), Automatica **29**, 3, pp. 681–693, May, 1993.
Owen J. G., G. Zames, "Duality theory of robust disturbance attenuation" (Regular paper), Automatica **29**, 3, pp. 695–705, May, 1993.
Dahleh M., A. Tesi, A. Vicino, "An overview of extremal properties for robust control of interval plants" (Regular paper), Automatica **29**, 3, pp. 707–721, May, 1993.
Sefton J. A., R. J. Ober, "On the gap metric and coprime factor perturbations" (Regular paper), Automatica **29**, 3, pp. 723–734, May, 1993.
Linnemann A., Qing-Guo Wang, "Block decoupling with stability by unity output feedback — solution and performance limitations" (Regular paper), Automatica **29**, 3, pp. 735–744, May, 1993.
Grega Wojciech, "Decomposition approach to the public transport scheduling problem" (Brief paper), Automatica **29**, 3, pp. 745–750, May, 1993.
Goh C. J., "On the nonlinear optimal regulator problem" (Brief paper), Automatica **29**, 3, pp. 751–756, May, 1993.
Canudas de Wit C., "robust control for servo-mechanisms under inexact friction compensation" (Brief paper), Automatica **29**, 3, pp. 757–761, May, 1993.
Junger I. B., O. I. Gerasimov, "Algebraic analysis of absolute stability for uncertain dynamical systems with nonlinear time-varying properties" (Brief paper), Automatica **29**, 3, pp. 763–766, May, 1993.
Zi-Qiang Lang, "Controller design oriented model identification method for Hammerstein system" (Brief paper), Automatica **29**, 3, pp. 767–771, May, 1993.
Halevi Y., W. M. Haddad, D. S. Bernstein, "A Riccati equation approach to the singular LQG problem" (Brief paper), Automatica **29**, 3, pp. 773–778, May, 1993.
Riedel K. S., "Block diagonally dominant positive definite approximate filters and smoothers" (Brief paper), Automatica **29**, 3, pp. 779–783, May, 1993.
Yasuda K., R. E. Skelton, K. M. Grigoriadis, "Covariance controllers: a new parametrization of the class of all stabilizing controllers" (Brief paper), Automatica **29**, 3, pp. 785–788, May, 1993.
Teo K. L., V. Rehbock, L. S. Jennings, "A new computational algorithm for functional inequality constrained optimization problems" (Technical Communiqué), Automatica **29**, 3, pp. 789–792, May, 1993.
Tarczynski A., "Simple discrete-time regulator minimizing sensitivity" (Technical Communiqué), Automatica **29**, 3, pp. 793–796, May, 1993.
Babary J. P., "On-line estimation and adaptive control of bioreactors — process measurement and control 1, by G. Bastin and D. Dochain" (Book review), Automatica **29**, 3, pp. 797–798, May, 1993.
Ricker N. L., "Adaptive optimal control: the thinking man's GPC, by R. R. Bitmead, M. Gevers and V. Wertz" (Book review), Automatica **29**, 3, pp. 798–800, May, 1993.
Green M., "Modern signals and systems, by H. Kwakernaak and R. Sivan" (Book review), Automatica **29**, 3, pp. 800–801, May, 1993.
Egardt B., "Adaptive control stability, convergence and robustness, by S. Sastry and M. Bodson" (Book review), Automatica **29**, 3, pp. 802–803, May, 1993.
Kloeden P., "Stochastic versus fuzzy approaches to multiobjective mathematical programming under uncertainty, by R. Slowinski and J. Teghem" (Book review), Automatica **29**, 3, p. 803, May, 1993.
Singh M. G., "Hierarchical multiobjective analysis of large-scale systems, by Y. Haimes, K. Tarvainen, T. Shima and J. Thadatnil" (Book review), Automatica **29**, 3, pp. 804–805, May, 1993.
Mareels I., "Linear controller design limits of performance, by S. P. Boyd and C. H. Barratt" (Book review), Automatica **29**, 3, p. 805, May, 1993.

## Volume 29, Issue 4 — July, 1993

Isermann R., B. Freyermuth, "Special section on fault detection, supervision and safety for technical processes" (Editorial), Automatica **29**, 4, pp. 813–814, July, 1993.
Isermann R., "Fault diagnosis of machines via parameter estimation and knowledge processing — tutorial paper" (Tutorial paper), Automatica **29**, 4, pp. 815–835, July, 1993.
Patton R. J., Jie Chen, "Optimal unknown input distribution matrix selection in robust fault diagnosis" (Brief paper), Automatica **29**, 4, pp. 837–841, July, 1993.
Sorsa T., H. N. Koivo, "Application of artificial neural networks in process fault diagnosis" (Brief paper), Automatica **29**, 4, pp. 843–849, July, 1993.
Hesketh T., D. J. Clements, R. Williams, "Adaptive mould level control for continuous steel slab casting" (Regular paper), Automatica **29**, 4, pp. 851–864, July, 1993.
Selkäinaho J., "Tuning a dynamic positioning system" (Regular paper), Automatica **29**, 4, pp. 865–875, July, 1993.
Miller D. E., E. J. Davison, "An adaptive tracking problem with a control input constraint" (Regular paper), Automatica **29**, 4, pp. 877–887, July, 1993.
Yu Wangling, J. E. Piou, K. M. Sobel, "Robust eigenstructure assignment for the extended medium range air-to-air missile" (Regular paper), Automatica **29**, 4, pp. 889–898, July, 1993.
Kelemen M., A. Bagchi, "Modeling and feedback control of a flexible arm of a robot for prescribed frequency-domain tolerances" (Regular paper), Automatica **29**, 4, pp. 899–909, July, 1993.
Veres S. M., J. P. Norton, "Predictive self-tuning control by parameter bounding and worst-case design" (Regular paper), Automatica **29**, 4, pp. 911–928, July, 1993.
Bodson M., "Pseudo-burst phenomenon in ideal adaptive systems" (Regular paper), Automatica **29**, 4, pp. 929–940, July, 1993.
Moore K. L., S. P. Bhattacharyya, M. Dahleh, "Capabilities and limitations of multirate control schemes" (Regular paper), Automatica **29**, 4, pp. 941–951, July, 1993.
Lieslehto J., J. T. Tanttu, H. N. Koivo, "An expert system for multivariable controller design" (Regular paper), Automatica **29**, 4, pp. 953–968, July, 1993.
Sideris A., H. Rotstein, "Single-input-single-output $\mathcal{H}_\infty$ -control with time domain constraints" (Regular paper), Automatica **29**, 4, pp. 969–983, July, 1993.
Qu Zhihua, "Robust control of nonlinear uncertain systems under generalized matching conditions" (Regular paper), Automatica **29**, 4, pp. 985–998, July, 1993.
Fu Jyun-Horng, E. H. Abed, "Linear feedback stabilization of nonlinear systems with an uncontrollable critical mode" (Regular paper), Automatica **29**, 4, pp. 999–1010, July, 1993.
Wigren T., "Recursive prediction error identification using the nonlinear Wiener model" (Regular paper), Automatica **29**, 4, pp. 1011–1025, July, 1993.
Verhaegen M., "Application of a subspace model identification technique to identify LTI systems operating in closed-loop"

(Regular paper), Automatica **29**, 4, pp. 1027–1040, July, 1993.
Havlena V., "Simultaneous parameter tracking and state estimation in a linear system" (Regular paper), Automatica **29**, 4, pp. 1041–1052, July, 1993.
Jaulin L., E. Walter, "Set inversion via interval analysis for nonlinear bounded-error estimation" (Regular paper), Automatica **29**, 4, pp. 1053–1064, July, 1993.
Heij C., "System identifiability from finite time series" (Regular paper), Automatica **29**, 4, pp. 1065–1077, July, 1993.
Sefton J. A., R. J. Ober, "Uncertainty in the weighted gap metric: a geometric approach" (Regular paper), Automatica **29**, 4, pp. 1079–1100, July, 1993.
Chen Chieh-Li, Pey-Chung Chen, Cha'o-Kuang Chen, "A pneumatic model-following control system using a fuzzy adaptive controller" (Brief paper), Automatica **29**, 4, pp. 1101–1105, July, 1993.
Lee T. H., C. C. Hang, W. K. Ho, P. K. Yue, "Implementation of a knowledge-based PID auto-tuner" (Brief paper), Automatica **29**, 4, pp. 1107–1113, July, 1993.
Doraiswami R., "Performance monitoring and fault prediction using a linear predictive coding algorithm" (Brief paper), Automatica **29**, 4, pp. 1115–1120, July, 1993.
Syrmos V. L., "On the finite transmission zero assignment problem" (Brief paper), Automatica **29**, 4, pp. 1121–1126, July, 1993.
Eldem V., A. Duyar, "Parametrization of multivariable systems using output injections: alpha canonical forms" (Brief paper), Automatica **29**, 4, pp. 1127–1131, July, 1993.
Xie Lihua, C. E. De Souza, Youyi Wang, "Robust control of discrete time uncertain dynamical systems" (Brief paper), Automatica **29**, 4, pp. 1133–1137, July, 1993.
Ying Hao, "General analytical structure of typical fuzzy controllers and their limiting structure theorems" (Brief paper), Automatica **29**, 4, pp. 1139–1143, July, 1993.
Chisci L., L. Giarré, E. Mosca, "Sidestepping the positive real condition in RELS via multiple RLS identifiers" (Technical Communiqué), Automatica **29**, 4, pp. 1145–1148, July, 1993.
Stoustrup J., "The $\mathcal{H}_\infty$ control problem: a state space approach, by A. A. Stoorvogel" (Book review), Automatica **29**, 4, pp. 1149–1150, July, 1993.
Kopacek P., "Applied robotic analysis, by R. E. Parkin" (Book review), Automatica **29**, 4, pp. 1150–1151, July, 1993.
Stanton D., "Fundamentals of manipulator calibration, by B. W. Mooring, Z. S. Roth and M. R. Driels" (Book review), Automatica **29**, 4, pp. 1151–1153, July, 1993.

## Volume 29, Issue 5 — September, 1993

Kwakernaak H., "Introduction" (Editorial), Automatica **29**, 5, pp. 1165–1167, September, 1993.
Benveniste A., K. J. Åström, "Meeting the challenge of computer science in the industrial applications of control: an introductory discussion to the special issue" (Editorial), Automatica **29**, 5, pp. 1169–1175, September, 1993.
Thompson L., G. Mertz, "Real-time expert system implementation at Monsanto-Krummrich" (Regular paper), Automatica **29**, 5, pp. 1177–1183, September, 1993.
Harakawa T., T. Kawaguchi, "Digital control in iron- and steelmaking processes" (Regular paper), Automatica **29**, 5, pp. 1185–1202, September, 1993.
Glattfelder A. H., L. Huser, "Hydropower reservoir level control: a case study" (Regular paper), Automatica **29**, 5, pp. 1203–1214, September, 1993.
Carpentier P., G. Cohen, "Applied mathematics in water supply network management" (Regular paper), Automatica **29**, 5, pp. 1215–1250, September, 1993.
Richalet J., "Industrial applications of model based predictive control" (Regular paper), Automatica **29**, 5, pp. 1251–1274, September, 1993.
Nikiforov I., V. Varavva, V. Kireichikov, "Application of statistical fault detection algorithms to navigation systems monitoring" (Regular paper), Automatica **29**, 5, pp. 1275–1290, September, 1993.
Liu Ketao, R. E. Skelton, "Integrated modeling and controller design with application to flexible structure control" (Regular paper), Automatica **29**, 5, pp. 1291–1314, September, 1993.
Isermann R., U. Raab, "Intelligent actuators — ways to autonomous actuating systems" (Regular paper), Automatica **29**, 5, pp. 1315–1331, September, 1993.
Åström K. J., T. Hägglund, A. Wallenborg, "Automatic tuning of digital controllers with applications to HVAC plants" (Regular paper), Automatica **29**, 5, pp. 1333–1343, September, 1993.
Whidborne J. F., "EMS control system design for a Maglev vehicle — a critical system" (Brief paper), Automatica **29**, 5, pp. 1345–1349, September, 1993.

## Volume 29, Issue 6 — November, 1993

Axelby G. S., "The 150th issue" (Editorial), Automatica **29**, 6, pp. 1355–1357, November, 1993.
Kahne S., "George S. Axelby" (Editorial), Automatica **29**, 6, p. 1359, November, 1993.
Kučera V., "Diophantine equations in control: a survey" (Survey paper), Automatica **29**, 6, pp. 1361–1375, November, 1993.
Harn Ywh-Pyng, R. L. Kosut, "Optimal low-order controller design via 'LQG-like' parametrization" (Regular paper), Automatica **29**, 6, pp. 1377–1394, November, 1993.
Laughlin D. L., M. Morari, R. D. Braatz, "Robust performance of cross-directional basis-weight control in paper machines" (Regular paper), Automatica **29**, 6, pp. 1395–1410, November, 1993.
Hu Yan-Ru, A. A. Goldenberg, "Dynamic control of coordinated redundant robots with torque optimization" (Regular paper), Automatica **29**, 6, pp. 1411–1424, November, 1993.
Freeman R. A., P. V. Kokotović, "Design of 'softer' robust nonlinear control laws" (Regular paper), Automatica **29**, 6, pp. 1425–1437, November, 1993.
Furey B. P., "A sequential quadratic programming-based algorithm for optimization of gas networks" (Regular paper), Automatica **29**, 6, pp. 1439–1450, November, 1993.
Li Duan, "Hierarchical control for large-scale systems with general multiple linear-quadratic structure" (Regular paper), Automatica **29**, 6, pp. 1451–1461, November, 1993.
Commault C., J. M. Dion, M. Benahcène, "Output feedback disturbance decoupling graph interpretation for structured systems" (Regular paper), Automatica **29**, 6, pp. 1463–1472, November, 1993.
Dasgupta S., C. R. Johnson, Jr., A. M. Baksho, "Characterizing persistent excitation for the sign-sign equation error identifier" (Regular paper), Automatica **29**, 6, pp. 1473–1489, November, 1993.
Zagalak P., J. F. Lafay, A. N. Herrera-Hernandez, "The row-by-row decoupling via state feedback: a polynomial approach" (Regular paper), Automatica **29**, 6, pp. 1491–1499, November, 1993.
Schaufelberger W., "Low cost control education software for MS-DOS PCs" (Regular paper), Automatica **29**, 6, pp. 1501–1516, November, 1993.
Zolghadri A., B. Bergeon, M. Monsion, "A two-ellipsoid overlap test for on-line failure detection" (Brief paper), Automatica **29**, 6, pp. 1517–1522, November, 1993.
Hof P. M. J. van den, R. J. P. Schrama, "An indirect method for transfer function estimation from closed loop data" (Brief

paper), Automatica **29**, 6, pp. 1523–1527, November, 1993.
Henderson I. A., J. McGhee, "Symbolic codes for multifrequency binary testing of control systems" (Brief paper), Automatica **29**, 6, pp. 1529–1533, November, 1993.
Akçay H., P. P. Khargonekar, "The least squares algorithm, parametric system identification and bounded noise" (Brief paper), Automatica **29**, 6, pp. 1535–1540, November, 1993.
Ailon A., "A solution to the disturbance decoupling problem in singular systems via analogy with state-space systems" (Brief paper), Automatica **29**, 6, pp. 1541–1545, November, 1993.
Gibbens P. W., C. A. Schwartz, Minyue Fu, "Achieving diagonal interactor matrix for multivariable linear systems with uncertain parameters" (Brief paper), Automatica **29**, 6, pp. 1547–1550, November, 1993.
Cerone V., "Feasible parameter set for linear models with bounded errors in all variables" (Brief paper), Automatica **29**, 6, pp. 1551–1555, November, 1993.
Tang Yu, R. Ortega, "Adaptive tuning to frequency response specifications" (Brief paper), Automatica **29**, 6, pp. 1557–1563, November, 1993.
Lozano R., R. G. Moctezuma, "Model reference adaptive control with unknown high frequency gain sign" (Brief paper), Automatica **29**, 6, pp. 1565–1569, November, 1993.
El-Khoury M., O. D. Crisalle, R. Longchamp, "Influence of zero locations on the number of step-response extrema" (Brief paper), Automatica **29**, 6, pp. 1571–1574, November, 1993.
Ahn H.-S., C.-H. Choi, K.-B. Kim, "Iterative learning control for a class of nonlinear systems" (Brief paper), Automatica **29**, 6, pp. 1575–1578, November, 1993.
Ying Hao, "The simplest fuzzy controllers using different inference methods are different nonlinear proportional-integral controllers with variable gains" (Brief paper), Automatica **29**, 6, pp. 1579–1589, November, 1993.
Aganovic Z., Z. Gajic, "Optimal control of weakly coupled bilinear systems" (Brief paper), Automatica **29**, 6, pp. 1591–1593, November, 1993.
Santacesaria C., R. Scattolini, "Easy tuning of Smith predictor in presence of delay uncertainty" (Technical Communiqué), Automatica **29**, 6, pp. 1595–1597, November, 1993.
Wang Qing-Guo, Tong Heng Lee, Chang Chieh Hang, "Pole assignment by output feedback: a solution for $2 \times 2$ plants" (Technical Communiqué), Automatica **29**, 6, pp. 1599–1601, November, 1993.
Ni Mao-Lin, Hong-Xin Wu, "A Riccati equation approach to the design of linear robust controllers" (Technical Communiqué), Automatica **29**, 6, pp. 1601–1605, November, 1993.
Bolek W., "Derivation of operational matrices of differentiation for orthogonal polynomials" (Technical Communiqué), Automatica **29**, 6, pp. 1607–1609, November, 1993.
Saberi A., B. M. Chen, P. Sannuti, Uy-Loi Li, "Simultaneous $H_2/H_\infty$ optimal control: the state feedback case" (Technical Communiqué), Automatica **29**, 6, pp. 1611–1614, November, 1993.
Knoop M. K. F., J. A. Moreno Perez, "Approximate model matching with multivariable PI-controllers" (Technical Communiqué), Automatica **29**, 6, pp. 1615–1616, November, 1993.
Vosvrda M. S., "Discrete random signals and statistical signal processing, by C. W. Therrien" (Book review), Automatica **29**, 6, p. 1617, November, 1993.
Tan Shaohua, "Modern control system theory and design, by S. M. Shinners" (Book review), Automatica **29**, 6, pp. 1617–1619, November, 1993.
Böhm J., "Uncertain models and robust control, by A. Weinmann" (Book review), Automatica **29**, 6, pp. 1619–1620, November, 1993.
Wahlberg B., "Identification of linear systems: a practical guideline to accurate modeling, J. Schoukens and R. Pintelon (editors)" (Book review), Automatica **29**, 6, pp. 1621–1622, November, 1993.
Starr S. H., "Concise encyclopedia of modelling & simulation, by D. P. Atherton and P. Borne (editors)" (Book review), Automatica **29**, 6, pp. 1622–1623, November, 1993.

## Volume 30, Issue 1 — January, 1994

Kahne S., "A message from the IFAC president" (Editorial), Automatica **30**, 1, p. 1, January, 1994.
Kwakernaak H., "New faces-more issues-increasing service" (Editorial), Automatica **30**, 1, p. 3, January, 1994.
"A message from the publishers" (Editorial), Automatica **30**, 1, p. 5, January, 1994.
Kučera V., "Automatica prize paper awards 1993" (Editorial), Automatica **30**, 1, p. 7, January, 1994.
Ottersten B., T. Söderström, B. Wahlberg, "Statistical signal processing and control" (Editorial), Automatica **30**, 1, p. 9, January, 1994.
Hari K. V. S., U. Gummadavelli, "Effect of spatial smoothing on the performance of subspace methods in the presence of array model errors" (Regular paper), Automatica **30**, 1, pp. 11–26, January, 1994.
Krim H., J. G. Proakis, "Smoothed eigenspace-based parameter estimation" (Regular paper), Automatica **30**, 1, pp. 27–38, January, 1994.
Luk F. T., S. Qiao, "A new matrix decomposition for signal processing" (Regular paper), Automatica **30**, 1, pp. 39–43, January, 1994.
Cho Y. M., G. Xu, T. Kailath, "Fast recursive identification of state space models via exploitation of displacement structure" (Regular paper), Automatica **30**, 1, pp. 45–59, January, 1994.
Verhaegen M., "Identification of the deterministic part of mimo state space models given in innovations form from input-output data" (Regular paper), Automatica **30**, 1, pp. 61–74, January, 1994.
Van Overschee P., B. De Moor, "N4SID: subspace algorithms for the identification of combined deterministic-stochastic systems" (Regular paper), Automatica **30**, 1, pp. 75–93, January, 1994.
Zhang Q., M. Basseville, A. Benveniste, "Early warning of slight changes in systems" (Regular paper), Automatica **30**, 1, pp. 95–113, January, 1994.
Steedly W. M., C.-H. J. Ying, R. L. Moses, "Statistical analysis of TLS-based prony techniques" (Regular paper), Automatica **30**, 1, pp. 115–129, January, 1994.
Stoica P., P. Händel, T. Söderström, "Approximate maximum likelihood frequency estimation" (Regular paper), Automatica **30**, 1, pp. 131–145, January, 1994.
Fuchs J.-J., "Multiscale identification of real sinusoids in noise" (Regular paper), Automatica **30**, 1, pp. 147–155, January, 1994.
Yang H., Y. Hua, "Statistical analysis of an eigendecomposition based method for 2-D frequency estimation" (Regular paper), Automatica **30**, 1, pp. 157–168, January, 1994.

## Volume 30, Issue 2 — February, 1994

David R., H. Alla, "Petri nets for modeling of dynamic systems- a survey" (Survey paper), Automatica **30**, 2, pp. 175–202, February, 1994.
Levis A. H., N. Moray, B. Hu, "Task decomposition and allocation problems and discrete event systems" (Regular paper), Automatica **30**, 2, pp. 203–216, February, 1994.
Johannsen G, A. H. Levis, H. G. Stassen, "Theoretical

problems in man-machine systems and their experimental validation" (Regular paper), Automatica **30**, 2, pp. 217–231, February, 1994.

Kuipers B., K. J. Åström, "The composition and validation of heterogeneous control laws" (Regular paper), Automatica **30**, 2, pp. 233–249, February, 1994.

Voulgaris P. G., M. A. Dahleh, L. S. Valavani, "$\mathcal{H}^\infty$ and $\mathcal{H}^2$ optimal controllers for periodic and multirate systems" (Regular paper), Automatica **30**, 2, pp. 251–263, February, 1994.

Ljung L., T. Glad, "On global identifiability for arbitrary model parametrizations" (Regular paper), Automatica **30**, 2, pp. 265–276, February, 1994.

Wang Y.-Y., P. M. Frank, N. E. Wu, "Near-optimal control of nonstandard singularly perturbed systems" (Regular paper), Automatica **30**, 2, pp. 277–292, February, 1994.

Scherer C. W., "The state-feedback $H_\infty$ -problem at optimality" (Regular paper), Automatica **30**, 2, pp. 293–305, February, 1994.

Bohlin T., "A case study of grey box identification" (Regular paper), Automatica **30**, 2, pp. 307–318, February, 1994.

Bermudez A., A. Martinez, "A state constrained optimal control problem related to the sterilization of canned foods" (Regular paper), Automatica **30**, 2, pp. 319–329, February, 1994.

Ferreira P. A. V., T. C. D. Borges, "System modeling and optimization under vector-valued criteria" (Brief paper), Automatica **30**, 2, pp. 331–336, February, 1994.

Ilchmann A., E. P. Ryan, "Universal λ -tracking for nonlinearly-perturbed systems in the presence of noise" (Brief paper), Automatica **30**, 2, pp. 337–346, February, 1994.

Fornasini E., G. Marchesini, M. E. Valcher, "On the structure of finite memory and separable two-dimensional systems" (Brief paper), Automatica **30**, 2, pp. 347–350, February, 1994.

Morgül Ö., "Control and stabilization of a rotating flexible structure" (Brief paper), Automatica **30**, 2, pp. 351–356, February, 1994.

Eslami M., "Stability robustness analysis of discrete-time systems with multiple large parameter variations" (Technical Communiqué), Automatica **30**, 2, pp. 357–361, February, 1994.

Chang S.-K., P.-L. Hsu, "Comments on 'sensitivity of failure detection using generalized observers'" (Technical Communiqué), Automatica **30**, 2, pp. 363–364, February, 1994.

Marlin T. E., "Integrated process control and automation, by J. E. Rijnsdorp" (Book review), Automatica **30**, 2, pp. 365–366, February, 1994.

Rimvall M., "Computer-aided analysis and design of linear control systems, by M. Jamshidi , M. Tarokh and B. Shafai" (Book review), Automatica **30**, 2, pp. 367–368, February, 1994.

Vaněček A., "Controlled and conditioned invariants in linear system theory, by G. Basile and G. Marro" (Book review), Automatica **30**, 2, pp. 369–370, February, 1994.

Patra A., "Block pulse functions and their applications in control systems, by Z. H. Jiang and W. Schaufelberger" (Book review), Automatica **30**, 2, pp. 370–371, February, 1994.

## Volume 30, Issue 3 — March, 1994

Foulloy L., B. Zavidovique, "Towards symbolic process control" (Regular paper), Automatica **30**, 3, pp. 379–390, March, 1994.

Zhou T., H. Kimura, "Simultaneous identification of nominal model, parametric uncertainty and unstructured uncertainty for robust control" (Regular paper), Automatica **30**, 3, pp. 391–402, March, 1994.

Wredenhagen G. F., P. R. Bélanger, "Piecewise-linear LQ control for systems with input constraints" (Regular paper), Automatica **30**, 3, pp. 403–416, March, 1994.

Lunze J., "Qualitative modelling of linear dynamical systems with quantized state measurements" (Regular paper), Automatica **30**, 3, pp. 417–431, March, 1994.

Hof P. M. J. van den, "Model sets and parametrizations for identification of multivariable equation error models" (Regular paper), Automatica **30**, 3, pp. 433–446, March, 1994.

Niedźwiecki M., "Identification of time-varying systems with abrupt parameter changes" (Regular paper), Automatica **30**, 3, pp. 447–459, March, 1994.

Er M. J., B. D. O. Anderson, W.-Y. Yan, "Gain margin improvement using generalized sampled-data hold function based multirate output compensator" (Regular paper), Automatica **30**, 3, pp. 461–470, March, 1994.

McInroy J. E., G. N. Saridis, "Techniques for selecting pose algorithms" (Regular paper), Automatica **30**, 3, pp. 471–487, March, 1994.

Kwon W. H., K. S. Lee, J. H. Lee, "Fast algorithms for optimal FIR filter and smoother of discrete-time state-space models" (Brief paper), Automatica **30**, 3, pp. 489–492, March, 1994.

Guo H.-J., T. Ishihara, H. Takeda, "A state-space parametrization of discrete-time two-degree-of-freedom integral controllers" (Brief paper), Automatica **30**, 3, pp. 493–497, March, 1994.

Gurov I. R., G. Tadmors, "On the robustness of $H_\infty$ state feedback control to nonlinear perturbations" (Brief paper), Automatica **30**, 3, pp. 499–502, March, 1994.

Paraskevopoulos P. N., K. G. Arvanitis, "Exact model matching of linear systems using generalized sampled-data hold functions" (Brief paper), Automatica **30**, 3, pp. 503–506, March, 1994.

Casavola A., E. Mosca, "Minimax LQ exact and inexact model matching problems" (Brief paper), Automatica **30**, 3, pp. 507–512, March, 1994.

Stamatelos A. M., "On-line regeneration control for a diesel particulate trap system" (Brief paper), Automatica **30**, 3, pp. 513–520, March, 1994.

Ying H., "Sufficient conditions on general fuzzy systems as function approximators" (Brief paper), Automatica **30**, 3, pp. 521–525, March, 1994.

Datta A., "On the transient behaviour of discrete-time model reference adaptive control: analysis and possible improvement" (Brief paper), Automatica **30**, 3, pp. 527–531, March, 1994.

Lin F., "Analysis of temporal performance of supervised discrete event systems" (Brief paper), Automatica **30**, 3, pp. 533–536, March, 1994.

Ragot J., D. Maquin, "An algorithm for obtaining the redundancy equations of LTI systems" (Brief paper), Automatica **30**, 3, pp. 537–542, March, 1994.

Wen C., "Decentralized robust control of class unknown interconnected systems" (Technical Communiqué), Automatica **30**, 3, pp. 543–544, March, 1994.

Boutayeb M., M. Darouach, "Comments on 'A computationally efficient technique for state estimation of non-linear systems'" (Technical Communiqué), Automatica **30**, 3, pp. 545–546, March, 1994.

Dasgupta S., B. D. O. Anderson, R. J. Kaye, "Persistence of excitation conditions for partially known systems" (Technical Communiqué), Automatica **30**, 3, pp. 547–550, March, 1994.

Hansson A., "A stochastic interpretation of membership functions" (Technical Communiqué), Automatica **30**, 3, pp.

551–553, March, 1994.
Bittanti S., G. De Nicolao, "The autonomous linear quadratic control problem: theory and numerical solutions, by V. M. Mehrmann" (Book review), Automatica **30**, 3, pp. 555–556, March, 1994.

## Volume 30, Issue 4 — April, 1994

Limebeer D. J. N., "Control systems software reviews" (Editorial), Automatica **30**, 4, p. 563, April, 1994.
Kwakernaak H., "Introduction to the special section" (Editorial), Automatica **30**, 4, p. 565, April, 1994.
Graebe S. F., "Robust and adaptive control of an unknown plant: a benchmark of new format" (Regular paper), Automatica **30**, 4, pp. 567–575, April, 1994.
Chisci L., L. Giarré, E. Mosca, "Indirect and implicit adaptive predictive control of the benchmark plant" (Regular paper), Automatica **30**, 4, pp. 577–584, April, 1994.
Cook P. A., "Application of model reference adaptive control to a benchmark problem" (Regular paper), Automatica **30**, 4, pp. 585–588, April, 1994.
De Larminat Ph., P. Houizot, "Application of ACSYDE (automatic control system design) to the IFAC-93 benchmark" (Regular paper), Automatica **30**, 4, pp. 589–591, April, 1994.
Foss B. A., S. O. Wasbø, "Benchmark IFAC 93: adaptive predictive PI-control of an unknown plant" (Regular paper), Automatica **30**, 4, pp. 593–598, April, 1994.
Hecker O., T. Knapp, R. Isermann, "Robust adaptive control of time varying process using parallel recursive estimators" (Regular paper), Automatica **30**, 4, pp. 599–604, April, 1994.
M'Saad M., I. Hejda, "Partial state reference model (adaptive) control of a benchmark example" (Regular paper), Automatica **30**, 4, pp. 605–613, April, 1994.
Postlethwaite I., J. F. Whidborne, G. Murad, D.-W. Gu, "Robust control of the benchmark problem using $H_\infty$ methods and numerical optimization techniques" (Regular paper), Automatica **30**, 4, pp. 615–619, April, 1994.
Yoon T.-W., D. W. Clarke, "Adaptive predictive control of the benchmark plant" (Regular paper), Automatica **30**, 4, pp. 621–628, April, 1994.
Zhou T., H. Kimura, "Robust control of the Sydney benchmark problem with intermittent adaptation" (Regular paper), Automatica **30**, 4, pp. 629–632, April, 1994.
Naim A., M. Kam, "On-line estimation of probabilities for distributed Bayesian detection" (Regular paper), Automatica **30**, 4, pp. 633–642, April, 1994.
Tesi A., A. Vicino, G. Zappa, "Design criteria for robust strict positive realness in adaptive schemes" (Regular paper), Automatica **30**, 4, pp. 643–654, April, 1994.
Nie J., D. A. Linkens, "FCMAC: a fuzzified cerebellar model articulation controller with self-organizing capacity" (Regular paper), Automatica **30**, 4, pp. 655–664, April, 1994.
Koivo A. J., S. H. Arnautovic, "Control of redundant manipulators with constraints using a reduced order model" (Regular paper), Automatica **30**, 4, pp. 665–677, April, 1994.
Hakvoort R. G., R. J. P. Schrama, P. M. J. van den Hof, "Approximate identification with closed-loop performance criterion and application to LQG feedback design" (Regular paper), Automatica **30**, 4, pp. 679–690, April, 1994.
Messmer A., M. Papageorgiou, "Automatic control methods applied to freeway network traffic" (Regular paper), Automatica **30**, 4, pp. 691–702, April, 1994.
Xu D. Y., "Robust stability of neutral delay differential systems" (Brief paper), Automatica **30**, 4, pp. 703–706, April, 1994.
Lee J. H., M. Morari, C. E. Garcia, "State-space interpretation of model predictive control" (Brief paper), Automatica **30**, 4, pp. 707–717, April, 1994.
Luo J. S., A. Johnson, P. P. J. van den Bosch, "Minimax guaranteed cost control for linear continuous-time systems with large parameter uncertainty" (Brief paper), Automatica **30**, 4, pp. 719–722, April, 1994.
Godbout, Jr. L. F., D. Jordan, M. E. Striefler, "Pole placement algorithms for multirate-sampled linear systems" (Brief paper), Automatica **30**, 4, pp. 723–727, April, 1994.
Likar A., A. Dobnikar, "On-line correction of the gain in Kalman filtering" (Technical Communiqué), Automatica **30**, 4, pp. 729–730, April, 1994.
Marshall S., "Machine vision: automated visual inspection and robot vision, by D. Vernon" (Book review), Automatica **30**, 4, pp. 731–732, April, 1994.
Bosgra O. H., P. F. Lambrechts, M. Steinbuch, "$\mu$ -analysis and synthesis toolbox ($\mu$ -tools), by G. J. Balas, J. C. Doyle, K. Glover, A. Packard and R. Smith" (Software review), Automatica **30**, 4, pp. 733–735, April, 1994.

## Volume 30, Issue 5 — May, 1994

Bagchi A., P. ten Brummelhuis, "Parameter identification in tidal models with uncertain boundaries" (Regular paper), Automatica **30**, 5, pp. 745–759, May, 1994.
Ling K.-V., A. L. Dexter, "Expert control of air-conditioning plant" (Regular paper), Automatica **30**, 5, pp. 761–773, May, 1994.
Larsson J. E., "Diagnostic reasoning strategies for means-end models" (Regular paper), Automatica **30**, 5, pp. 775–787, May, 1994.
Frank P. M., X. Ding, "Frequency domain approach to optimally robust residual generation and evaluation for model-based fault diagnosis" (Regular paper), Automatica **30**, 5, pp. 789–804, May, 1994.
Rao H. R., "Two schemes for information acquisition: an entropic assessment" (Regular paper), Automatica **30**, 5, pp. 805–816, May, 1994.
Huang P.-Y., B.-S. Chen, "Robust tracking of linear MIMO time-varying systems" (Regular paper), Automatica **30**, 5, pp. 817–830, May, 1994.
Diggelen F. van, K. Glover, "A Hadamard weighted loop shaping design procedure for robust decoupling" (Regular paper), Automatica **30**, 5, pp. 831–845, May, 1994.
Lebret G., J. J. Loiseau, "Proportional and proportional-derivative canonical forms for descriptor systems with outputs" (Regular paper), Automatica **30**, 5, pp. 847–864, May, 1994.
Chai T. Y., Z. Tao, "A new model reference robust adaptive controller in the presence of unmodeled dynamics and bounded disturbances" (Brief paper), Automatica **30**, 5, pp. 865–869, May, 1994.
Bleuler H., D. Vischer, G. Schweitzer, A. Traxler, D. Zlatnik' "New concepts for cost-effective magnetic bearing control" (Brief paper), Automatica **30**, 5, pp. 871–876, May, 1994.
Liu V.-T., C.-L. Lin, "Robust stabilization for composite observer-based control of discrete systems" (Brief paper), Automatica **30**, 5, pp. 877–881, May, 1994.
Bélanger P. R., O. Arafat, M. Gaber, S. Gendron, D. Vurgait-Cherson' "Direct performance optimization using Laguerre models" (Brief paper), Automatica **30**, 5, pp. 883–886, May, 1994.
Zhang H., C. Z. Han, B. W. Wan, R. Shi, "Identification and control of a large kinescope glass furnace" (Brief paper), Automatica **30**, 5, pp. 887–892, May, 1994.
De Moor B., M. Gevers, G. C. Goodwin, "$\ell_2$ -overbiased, $\ell_2$ -underbiased and $\ell_2$ -unbiased estimation of transfer functions" (Brief paper), Automatica **30**, 5, pp. 893–898, May, 1994.
Choi S.-B., D.-W. Park, S. Jayasuriya, "A time-varying sliding surface for fast and robust tracking control of second-order

uncertain systems" (Brief paper), Automatica **30**, 5, pp. 899–904, May, 1994.
Xiaotian C., L. Zhang, J. C. Readle, "The analytic formulas of the ripple-free tracking problem" (Brief paper), Automatica **30**, 5, pp. 905–908, May, 1994.
Lozano R., X.-H. Zhao, R. G. Moctezuma, "Singularity-free adaptive pole placement for second-order systems" (Technical Communiqué), Automatica **30**, 5, pp. 909–912, May, 1994.
Myszkorowski P., "On the stability of discrete-time linear interval systems" (Technical Communiqué), Automatica **30**, 5, pp. 913–914, May, 1994.
Coxson G. E., "Remarks on an affinity condition in 'a survey of extreme point results for robustness of control systems'" (Technical Communiqué), Automatica **30**, 5, pp. 915–916, May, 1994.
Kadlec J., "Parallel processing in digital control, by D. F. G. Nocetti and P. J. Fleming" (Book review), Automatica **30**, 5, pp. 917–918, May, 1994.
Kasenally E. M., "Robust control toolbox, by R. Y. Chiang and M. G. Safonov" (Software review), Automatica **30**, 5, pp. 919–920, May, 1994.

## Volume 30, Issue 6 — June, 1994

Howell J., "Model-based fault detection in information poor plants" (Regular paper), Automatica **30**, 6, pp. 929–943, June, 1994.
Yaz E., R. E. Skelton, "Parametrization of all linear compensators for discrete-time stochastic parameter systems" (Regular paper), Automatica **30**, 6, pp. 945–955, June, 1994.
Hovd M., S. Skogestad, "Control of symmetrically interconnected plants" (Regular paper), Automatica **30**, 6, pp. 957–973, June, 1994.
Choi S. G., M. A. Johnson, M. J. Grimble, "Polynomial LQG control of back-up-roll eccentricity gauge variations in cold rolling mills" (Regular paper), Automatica **30**, 6, pp. 975–992, June, 1994.
De Luca A., S. Panzieri, "An iterative scheme for learning gravity compensation in flexible robot arms" (Regular paper), Automatica **30**, 6, pp. 993–1002, June, 1994.
Sivashankar N., I. Kaminer, P. P. Khargonekar, "Optimal controller synthesis with $\mathcal{D}$ stability" (Brief paper), Automatica **30**, 6, pp. 1003–1008, June, 1994.
Foudopoulos P., S. Kollias, C. Halkias, "An efficient approach to the detection of Bernoulli-Gaussian processes" (Brief paper), Automatica **30**, 6, pp. 1009–1013, June, 1994.
Haddad W. M., D. S. Bernstein, "Parameter-dependent Lyapunov functions and the discrete-time Popov criterion for robust analysis" (Brief paper), Automatica **30**, 6, pp. 1015–1021, June, 1994.
Krishnan H., M. Reyhanoglu, H. McClamroch, "Attitude stabilization of a rigid spacecraft using two control torques: a nonlinear control approach based on the spacecraft attitude dynamics" (Brief paper), Automatica **30**, 6, pp. 1023–1027, June, 1994.
Chen J., J. S. Freudenberg, C. N. Nett, "The role of the condition number and the relative gain array in robustness analysis" (Brief paper), Automatica **30**, 6, pp. 1029–1035, June, 1994.
Chapellat H., L. H. Keel, S. P. Bhattacharyya, "Extremal robustness properties of multilinear interval systems" (Brief paper), Automatica **30**, 6, pp. 1037–1042, June, 1994.
In H., C. Zhang, "A multirate digital controller for model matching" (Brief paper), Automatica **30**, 6, pp. 1043–1050, June, 1994.
Frangos C., Y. Yavin, "A synthesis procedure for discrete linear time-dependent control systems" (Brief paper), Automatica **30**, 6, pp. 1051–1056, June, 1994.
Qu Z., D. M. Dawson, "Robust control of cascaded and individually feedback linearizable nonlinear systems" (Brief paper), Automatica **30**, 6, pp. 1057–1064, June, 1994.
Feng G., C. Zhang, M. Palaniswami, "Stability of input amplitude constrained adaptive pole placement control systems" (Brief paper), Automatica **30**, 6, pp. 1065–1070, June, 1994.
Wittenmark B., "Advances in adaptive control, by K. S. Narendra, R. Ortega and P. Dorato" (Book review), Automatica **30**, 6, p. 1071, June, 1994.
Benson R. S., "Introduction to chemical process instrumentation, by I. Nagy" (Book review), Automatica **30**, 6, pp. 1071–1072, June, 1994.
Daniel R., "Telerobotics, automation and human supervisory control, by T. B. Sheridan" (Book review), Automatica **30**, 6, pp. 1072–1073, June, 1994.
Johansson R., "Model reference adaptive control: from theory to practice, by H. Butler" (Book review), Automatica **30**, 6, pp. 1073–1075, June, 1994.
Levy J. B., "Computer systems for automation and control, by G. Olsson and G. Piani" (Book review), Automatica **30**, 6, p. 1075, June, 1994.

## Volume 30, Issue 7 — July, 1994

Armstrong-Hélouvry B., P. Dupont, C. Canudas de Wit, "A survey of models, analysis tools and compensation methods for the control of machines with friction" (Survey paper), Automatica **30**, 7, pp. 1083–1138, July, 1994.
Chen Tongwen, Li Qiu, "$\mathcal{H}_\infty$ Design of general multirate sampled-data control systems" (Regular paper), Automatica **30**, 7, pp. 1139–1152, July, 1994.
Schoukens J., R. Pintelon, H. Van Hamme, "Identification of linear dynamic systems using piecewise constant excitations: use, misuse and alternatives" (Regular paper), Automatica **30**, 7, pp. 1153–1169, July, 1994.
Leva A., C. Maffezzoni, R. Scattolini, "Self-tuning PI-PID regulators for stable systems with varying delay" (Regular paper), Automatica **30**, 7, pp. 1171–1183, July, 1994.
Ying Hao, "Practical design of nonlinear fuzzy controllers with stability analysis for regulating processes with unknown mathematical models" (Regular paper), Automatica **30**, 7, pp. 1185–1195, July, 1994.
Chisci L., E. Mosca, "MMSE deconvolution via polynomial methods and its dual LQG regulation" (Brief paper), Automatica **30**, 7, pp. 1197–1201, July, 1994.
Bai Er-Wei, S. Raman, "Robust system identification with noisy experimental data: projection operator and linear algorithms" (Brief paper), Automatica **30**, 7, pp. 1203–1206, July, 1994.
Lehman B., J. Bentsman, "Vibrational stabilization and calculation formulas for nonlinear time delay systems: linear multiplicative vibrations" (Brief paper), Automatica **30**, 7, pp. 1207–1211, July, 1994.
Clarke D., "Predictive control, by R. Soeterboek" (Book review), Automatica **30**, 7, pp. 1213–1215, July, 1994.

## Volume 30, Issue 8 — August, 1994

Jobling C. P., P. W. Grant, H. A. Barker, P. Townsend, "Object-oriented programming in control system design: a survey" (Survey paper), Automatica **30**, 8, pp. 1221–1261, August, 1994.
Goodwin G. C., M. Salgado, "Frequency domain sensitivity functions for continuous time systems under sampled data control" (Regular paper), Automatica **30**, 8, pp. 1263–1270, August, 1994.
Delopoulos A., G. B. Giannakis, "Consistent identification of stochastic linear systems with noisy input-output data"

(Regular paper), Automatica **30**, 8, pp. 1271–1294, August, 1994.
Leyval L., S. Gentil, S. Feray-Beaumont, "Model-based causal reasoning for process supervision" (Regular paper), Automatica **30**, 8, pp. 1295–1306, August, 1994.
Iwasaki T., R. E. Skelton, "All controllers for the general $\mathcal{H}_\infty$ control problem: LMI existence conditions and state space formulas" (Regular paper), Automatica **30**, 8, pp. 1307–1317, August, 1994.
Hilhorst R. A., J. van Amerongen, P. Löhnberg, H. J. A. F. Tulleken, "A supervisor for control of mode-switch processes" (Regular paper), Automatica **30**, 8, pp. 1319–1331, August, 1994.
Xia Qijun, Ming Rao, Yiqun Ying, Xuemin Shen, "Adaptive fading Kalman filter with an application" (Brief paper), Automatica **30**, 8, pp. 1333–1338, August, 1994.
Chen Jeng-Ming, Bor-Sen Chen, "A higher-order correlation method for model-order and parameter estimation" (Brief paper), Automatica **30**, 8, pp. 1339–1344, August, 1994.
Crnošija P., S. Bogdan, Z. Kovačić, "Sensitivity model and synthesis of dead-beat algorithms in digital servosystems" (Brief paper), Automatica **30**, 8, pp. 1345–1350, August, 1994.

## Volume 30, Issue 9 — September, 1994

Paduano J. D., L. Valavani, A. H. Epstein, E. M. Greitzer, G. R. Guenette' "Modeling for control of rotating stall" (Regular paper), Automatica **30**, 9, pp. 1357–1373, September, 1994.
De Nicolao G., "Cyclomonotonicity, Riccati equations and periodic receding horizon control" (Regular paper), Automatica **30**, 9, pp. 1375–1388, September, 1994.
Xu Li, O. Saito, K. Abe, "The design of practically stable $n$D feedback systems" (Regular paper), Automatica **30**, 9, pp. 1389–1397, September, 1994.
Elliott R. J., "Exact adaptive filters for Markov chains observed in Gaussian noise" (Regular paper), Automatica **30**, 9, pp. 1399–1408, September, 1994.
Wang Youyi, D. J. Hill, R. H. Middleton, Long Gao, "Transient stabilization of power systems with an adaptive control law" (Brief paper), Automatica **30**, 9, pp. 1409–1413, September, 1994.
Hong K.-S., J. Bentsman, "Application of averaging method for integro-differential equations to model reference adaptive control of parabolic systems" (Brief paper), Automatica **30**, 9, pp. 1415–1419, September, 1994.
Peleties P., R. DeCarlo, "Analysis of a hybrid system using symbolic dynamics and Petri nets" (Brief paper), Automatica **30**, 9, pp. 1421–1427, September, 1994.
Palm R., "Robust control by fuzzy sliding mode" (Brief paper), Automatica **30**, 9, pp. 1429–1437, September, 1994.
Bayard D. S., "High-order multivariable transfer function curve fitting: algorithms, sparse matrix methods and experimental results" (Brief paper), Automatica **30**, 9, pp. 1439–1444, September, 1994.
Guo Limin, A. Schöne, Xiachun Ding, "Control of hydraulic rotary multi-motor systems based on bilinearization" (Brief paper), Automatica **30**, 9, pp. 1445–1453, September, 1994.
Voulgaris P. G., M. A. Dahleh, L. S. Valavani, "Robust adaptive control: a slowly varying systems approach" (Brief paper), Automatica **30**, 9, pp. 1455–1461, September, 1994.
Lucibello P., "State steering by learning for a class of nonlinear control systems" (Brief paper), Automatica **30**, 9, pp. 1463–1468, September, 1994.
Zhou Bin, N. K. Bose, "A unified approach to data association in multitarget tracking" (Brief paper), Automatica **30**, 9, pp. 1469–1472, September, 1994.
Yao Bin, S. P. Chan, Danwei Wang, "Variable structure adaptive motion and force control of robot manipulators" (Brief paper), Automatica **30**, 9, pp. 1473–1477, September, 1994.
Chan Jenq-Tzong H., "Multivariable control system synthesis: an experimental data based numerical approach" (Brief paper), Automatica **30**, 9, pp. 1479–1483, September, 1994.
Malmgren A., K. Nordström, "A contraction property for state feedback design of linear discrete-time systems" (Brief paper), Automatica **30**, 9, pp. 1485–1489, September, 1994.
Bai Er-Wei, M. Andersland, "Stochastic and worst case system identification are not necessarily incompatible" (Technical Communiqué), Automatica **30**, 9, pp. 1491–1493, September, 1994.
León De La Barra S. B. A., M. A. Fernández A., "Transient properties of type $m$ continuous time scalar systems" (Technical Communiqué), Automatica **30**, 9, pp. 1495–1496, September, 1994.
Su Chun-Yi, Y. Stepanenko, "Adaptive sliding mode control of robot manipulators: general sliding manifold case" (Technical Communiqué), Automatica **30**, 9, pp. 1497–1500, September, 1994.
Najson F., E. Kreindler, "On compensation for neglected actuator dynamics" (Technical Communiqué), Automatica **30**, 9, pp. 1501–1502, September, 1994.
Vingerhoeds R. A., "Applied optimal control and estimation: digital design and implementation, by F. R. Lewis" (Book review), Automatica **30**, 9, pp. 1503–1504, September, 1994.

## Volume 30, Issue 10 — October, 1994

Årzén K.-E., "Grafcet for intelligent supervisory control applications" (Regular paper), Automatica **30**, 10, pp. 1513–1525, October, 1994.
Buffington J. M., A. G. Sparks, S. S. Banda, "Robust longitudinal axis flight control for an aircraft with thrust vectoring" (Regular paper), Automatica **30**, 10, pp. 1527–1540, October, 1994.
Koung C.-W., J. F. MacGregor, "Identification for robust multivariable control: the design of experiments" (Regular paper), Automatica **30**, 10, pp. 1541–1554, October, 1994.
Gawronski W., "A balanced LQG compensator for flexible structures" (Regular paper), Automatica **30**, 10, pp. 1555–1564, October, 1994.
Geromel J. C., J. Bernussou, P. L. D. Peres, "Decentralized control through parameter space optimization" (Regular paper), Automatica **30**, 10, pp. 1565–1578, October, 1994.
Lee S. D., J. Lee, S. Park, "Nonlinear self-tuning regulator for pH systems" (Regular paper), Automatica **30**, 10, pp. 1579–1586, October, 1994.
Khalil H. K., "Robust servomechanism output feedback controllers for feedback linearizable systems" (Regular paper), Automatica **30**, 10, pp. 1587–1599, October, 1994.
Hovd M., S. Skogestad, "Sequential design of decentralized controllers" (Brief paper), Automatica **30**, 10, pp. 1601–1607, October, 1994.
Shafiei Z., T. Shenton, "Tuning of PID-type controllers for stable and unstable systems with time delay" (Brief paper), Automatica **30**, 10, pp. 1609–1615, October, 1994.
Chen B. M., A. Saberi, Y. Shamash, P. Sannutu, "Construction and parametrization of all static and dynamic $H_2$ -optimal state feedback solutions for discrete-time systems" (Brief paper), Automatica **30**, 10, pp. 1617–1624, October, 1994.
Mielczarski W., A. M. Zajaczkowski, "Nonlinear field voltage control of a synchronous generator using feedback linearization" (Brief paper), Automatica **30**, 10, pp. 1625–1630, October, 1994.
Schaft A. van der, "Nonlinear systems analysis, by M. Vidyasagar" (Book review), Automatica **30**, 10, pp. 1631–1632, October, 1994.

Van Dooren P. M., "Control system toolbox, by A. Grace, A. Laub, J. Little and C. Thompson" (Software review), Automatica **30**, 10, pp. 1633–1634, October, 1994.

## Volume 30, Issue 11 — November, 1994

Ono E., K. Takanami, N. Iwama, Y. Hayashi, Y. Hirano' Y. Satoh, "Vehicle integrated control for steering and traction systems by $\mu$ -synthesis" (Regular paper), Automatica **30**, 11, pp. 1639–1647, November, 1994.

Lundh M., K. J. Åström, "Automatic initialization of a robust self-tuning controller" (Regular paper), Automatica **30**, 11, pp. 1649–1662, November, 1994.

Kotob S., M. Badran, I. Al-Atiqi, M. Juraidan, "Analysis and applications of self-tuning controls in a refining process: case study" (Regular paper), Automatica **30**, 11, pp. 1663–1675, November, 1994.

Badano F., M. Bétemps, D. Thomasset, "Control of a planar fine positioner actuated by metal bellows" (Regular paper), Automatica **30**, 11, pp. 1677–1691, November, 1994.

Christian L., J. Freudenberg, "Limits on achievable robustness against coprime factor uncertainty" (Regular paper), Automatica **30**, 11, pp. 1693–1702, November, 1994.

Krstić M., I. Kanellakopoulos, P. V. Kokotović, "Passivity and parametric robustness of a new class of adaptive systems" (Regular paper), Automatica **30**, 11, pp. 1703–1716, November, 1994.

Yamashita M., K. Fujimori, K. Hayakawa, H. Kimura, "Application of $H_\infty$ control to active suspension systems" (Regular paper), Automatica **30**, 11, pp. 1717–1729, November, 1994.

Pronzato L., E. Walter, "Minimum-volume ellipsoids containing compact sets: application to parameter bounding" (Regular paper), Automatica **30**, 11, pp. 1731–1739, November, 1994.

Fang Chun-Hsiung, Li Lee, Fan-Ren Chang, "Robust control analysis and design for discrete-time singular systems" (Regular paper), Automatica **30**, 11, pp. 1741–1750, November, 1994.

Malmgren A., K. Nordström, "Optimal state feedback control with a prescribed contraction property" (Brief paper), Automatica **30**, 11, pp. 1751–1756, November, 1994.

Gille J. C., S. Wegrzyn, P. Vidal, "On developmental systems: multilevel and parallel development" (Brief paper), Automatica **30**, 11, pp. 1757–1760, November, 1994.

Ackermann J., "Robust decoupling, ideal steering dynamics and yaw stabilization of 4ws cars" (Brief paper), Automatica **30**, 11, pp. 1761–1768, November, 1994.

Wang P. P., Ching-Yu Tyan, "Fuzzy dynamic system and fuzzy linguistic controller classification" (Brief paper), Automatica **30**, 11, pp. 1769–1774, November, 1994.

Filipović V. Ž., B. D. Kovačević, "On robust AML identification algorithms" (Brief paper), Automatica **30**, 11, pp. 1775–1778, November, 1994.

Tsypkin Y. Z., D. J. Hill, A. J. Isaksson, "A frequency-domain robust instability criterion for time-varying and non-linear systems" (Brief paper), Automatica **30**, 11, pp. 1779–1783, November, 1994.

Morgül Ö, "A dynamic control law for the wave equation" (Brief paper), Automatica **30**, 11, pp. 1785–1792, November, 1994.

Park J., G. Rizzoni, W. B. Ribbens, "On the representation of sensor faults in fault detection filters" (Brief paper), Automatica **30**, 11, pp. 1793–1795, November, 1994.

Wang Y. W., D. S. Bernstein, "$H_2$ -suboptimal stable stabilization" (Brief paper), Automatica **30**, 11, pp. 1797–1800, November, 1994.

Hou Ming, P. C. Müller, "Design of decentralized linear state function observers" (Brief paper), Automatica **30**, 11, pp. 1801–1805, November, 1994.

Amerongen J. van, "Applied digital control — theory, design and implementation, by R. J. Leigh" (Book review), Automatica **30**, 11, pp. 1807–1808, November, 1994.

Troch I., "Simulation and modelling of continuous systems — a case study approach, by D. Matko, R. Karba and B. Zupancic" (Book review), Automatica **30**, 11, pp. 1808–1810, November, 1994.

Harris C. J., "Neurocontrol, by H. Tolle and E. Ersu" (Book review), Automatica **30**, 11, pp. 1810–1811, November, 1994.

Kennedy R. A., "Linear system theory, by W. J. Rugh" (Book review), Automatica **30**, 11, pp. 1811–1813, November, 1994.

## Volume 30, Issue 12 — December, 1994

Chen Jie, Guoxiang Gu, C. N. Nett, "Worst case identification of continuous time systems via interpolation" (Regular paper), Automatica **30**, 12, pp. 1825–1837, December, 1994.

Mease K. D., M. A. van Buren, "Geometric synthesis of aerospace plane ascent guidance logic" (Regular paper), Automatica **30**, 12, pp. 1839–1849, December, 1994.

Nikoukhah R., "Innovations generation in the presence of unknown inputs: application to robust failure detection" (Regular paper), Automatica **30**, 12, pp. 1851–1867, December, 1994.

Kothare M. V., P. J. Campo, M. Morari, C. N. Nett, "A unified framework for the study of anti-windup designs" (Regular paper), Automatica **30**, 12, pp. 1869–1883, December, 1994.

Krishnan H., N. H. McClamroch, "Tracking in nonlinear differential-algebraic control systems with applications to constrained robot systems" (Regular paper), Automatica **30**, 12, pp. 1885–1897, December, 1994.

Young P. M., "The rank one mixed $\mu$ problem and 'Kharitonov-type' analysis" (Regular paper), Automatica **30**, 12, pp. 1899–1911, December, 1994.

Elshafei A.-L., G. A. Dumont, A. Elnaggar, "Adaptive GPC based on Laguerre-filters modelling" (Regular paper), Automatica **30**, 12, pp. 1913–1920, December, 1994.

Misra P., P. Van Dooren, A. Varga, "Computation of structural invariants of generalized state-space systems" (Regular paper), Automatica **30**, 12, pp. 1921–1936, December, 1994.

Hejmo W., "Time-optimal feedback system controlling a discontinuous dynamic object reaching a moving target" (Brief paper), Automatica **30**, 12, pp. 1937–1941, December, 1994.

Gutman P.-O., K. Peleg, U. Ben-Hanan, "Classification by varying features with an erring sensor" (Brief paper), Automatica **30**, 12, pp. 1943–1948, December, 1994.

Maitelli A. L., T. Yoneyama, "A two-stage dual suboptimal controller for stochastic systems using approximate moments" (Brief paper), Automatica **30**, 12, pp. 1949–1954, December, 1994.

Hippe P., "Strictly doubly coprime factorizations and all stabilizing compensators related to reduced-order observers" (Brief paper), Automatica **30**, 12, pp. 1955–1959, December, 1994.

Li Kam-Chi, Tin-Pui Leung, Yue-Ming Hu, "Sliding mode control of distributed parameter systems" (Brief paper), Automatica **30**, 12, pp. 1961–1966, December, 1994.

Ahmed M. S., "An innovation representation for nonlinear systems with application to parameter and state estimation" (Brief paper), Automatica **30**, 12, pp. 1967–1974, December, 1994.

Yusof R., S. Omatu, M. Khalid, "Self-tuning PID control: a multivariable derivation and application" (Brief paper), Automatica **30**, 12, pp. 1975–1981, December, 1994.

Schei T. S., "Automatic tuning of PID controllers based on transfer function estimation" (Brief paper), Automatica **30**, 12, pp. 1983–1989, December, 1994.

Palsson O. P., H. Madsen, H. T. Søgaard, "Generalized predictive control for non-stationary systems" (Brief paper), Automatica **30**, 12, pp. 1990–1997, December, 1994.
Ahmed M. S., "State space based dual-rate self-tuning" (Brief paper), Automatica **30**, 12, pp. 1999–2007, December, 1994.
Park S.-H., Z. Bien, "$H_\infty$ control with performance bound for a class of uncertain linear systems" (Technical Communiqué), Automatica **30**, 12, pp. 2009–2012, December, 1994.
Bemporad A., L. Chisci, E. Mosca, "On the stabilizing property of SIORHC" (Technical Communiqué), Automatica **30**, 12, pp. 2013–2015, December, 1994.

## Volume 31, Issue 1 — January, 1995

Wang L. Y., G.-M. Joh, "Continuity of optimal robustness and robust stabilization in slowly varying systems" (Regular paper), Automatica **31**, 1, pp. 1–11, January, 1995.
Hirata T., S. Koizumi, R. Takahashi, "H-infinity control of railroad vehicle active suspension" (Editorial), Automatica **31**, 1, pp. 13–24, January, 1995.
Anderson B. D. O., F. Kraus, M. Mansour, S. Dasgupta, "Easily testable sufficient conditions for the robust stability of systems with multilinear parameter dependence" (Regular paper), Automatica **31**, 1, pp. 25–40, January, 1995.
Voda A. A., I. D. Landau, "A method for the auto-calibration of PID controllers" (Regular paper), Automatica **31**, 1, pp. 41–53, January, 1995.
Chen L., G. Bastin, V. Van Breusegem, "A case study of adaptive nonlinear regulation of fed-batch biological reactors" (Regular paper), Automatica **31**, 1, pp. 55–65, January, 1995.
Chin T. M., W. C. Karl, A. S. Willsky, "A distributed and iterative method for square root filtering in space-time estimation" (Regular paper), Automatica **31**, 1, pp. 67–82, January, 1995.
Khorrami F., S. Jain, A. Tzes, "Experimental results on adaptive nonlinear control and input preshaping for multi-link flexible manipulators" (Regular paper), Automatica **31**, 1, pp. 83–97, January, 1995.
Dullerud G. E., K. Glover, "Analysis of structured LTI uncertainty in sampled-data systems" (Regular paper), Automatica **31**, 1, pp. 99–113, January, 1995.
Hui S., W. E. Lillo, S. H. Zak, "Solving minimum norm problems using penalty functions and the gradient method" (Regular paper), Automatica **31**, 1, pp. 115–124, January, 1995.
Erickson M. A., A. J. Laub, "An algorithmic test for checking stability of feedback spectral systems" (Regular paper), Automatica **31**, 1, pp. 125–135, January, 1995.
Veillette R. J., "Reliable linear-quadratic state-feedback control" (Brief paper), Automatica **31**, 1, pp. 137–143, January, 1995.
Brogliato B., A. Trofino Neto, "Practical stabilization of a class of nonlinear systems with partially known uncertainties" (Brief paper), Automatica **31**, 1, pp. 145–150, January, 1995.
Mao C.-J., J.-H. Yang, "Decentralized output tracking for linear uncertain interconnected systems" (Brief paper), Automatica **31**, 1, pp. 151–154, January, 1995.
Dórea C. E. T., B. E. A. Milani, "A computational method for optimal L-Q regulation with simultaneous disturbance decoupling" (Brief paper), Automatica **31**, 1, pp. 155–160, January, 1995.
Schwartz C. A., A. Yan, "Comments on 'Achieving diagonal interaction matrix for multivariable linear systems with uncertain parameters'" (Technical Communiqué), Automatica **31**, 1, pp. 161–164, January, 1995.
Patel V. Y., K. B. Datta, "A counter example for the conjecture in 'An algorithm for interpolation with units in H-infinity'" (Technical Communiqué), Automatica **31**, 1, p. 165, January, 1995.

## Volume 31, Issue 2 — February, 1995

Wimmer H. K., "Lattice properties of sets of semidefinite solutions of continuous-time algebraic Riccati equations" (Regular paper), Automatica **31**, 2, pp. 173–182, February, 1995.
Sorenson A. J., O. Egeland, "Design of ride control system for surface effect ships using dissipative control" (Regular paper), Automatica **31**, 2, pp. 183–199, February, 1995.
Verhaegen M., X. Yu, "A class of subspace model identification algorithms to identify periodically and arbitrarily time-varying systems" (Regular paper), Automatica **31**, 2, pp. 201–216, February, 1995.
Bitsoris G., E. Gravalou, "Comparison principle, positive invariance and constrained regulation of nonlinear systems" (Brief paper), Automatica **31**, 2, pp. 217–222, February, 1995.
Bitsoris G., M. Vassilaki, "Constrained regulation of linear systems" (Brief paper), Automatica **31**, 2, pp. 223–227, February, 1995.
Lee J. H., R. D. Braatz, M. Morari, A. Packard, "Screening tools for robust control structure selection" (Brief paper), Automatica **31**, 2, pp. 229–235, February, 1995.
Er M. J., B. D. O. Anderson, "Design of reduced-order multirate output linear functional observer-based compensators" (Brief paper), Automatica **31**, 2, pp. 237–242, February, 1995.
Jang T.-J., C.-H. Choi, H.-S. Ahn, "Iterative learning control in feedback systems" (Brief paper), Automatica **31**, 2, pp. 243–248, February, 1995.
Zhou K., P. P. Khargonekar, J. Stoustrup, H. H. Niemann, "Robust performance of systems with structured uncertainties in state space" (Brief paper), Automatica **31**, 2, pp. 249–255, February, 1995.
Wang D., Y. C. Soh, C. C. Cheah, "Robust motion and force control of constrained manipulators by learning" (Brief paper), Automatica **31**, 2, pp. 257–262, February, 1995.
Lin W., C. I. Byrnes, "Passivity and absolute stabilization of a class of discrete-time nonlinear systems" (Brief paper), Automatica **31**, 2, pp. 263–267, February, 1995.
Lin W., C. I. Byrnes, "Zero-state observability and stability of discrete-time nonlinear systems" (Brief paper), Automatica **31**, 2, pp. 269–274, February, 1995.
Heck B. S., S. V. Yallapragada, M. K. H. Fan, "Numerical methods to design the reaching phase of output feedback variable structure control" (Brief paper), Automatica **31**, 2, pp. 275–279, February, 1995.
De Oliveira N. M. C., L. T. Biegler, "An extension of Newton-type algorithms for nonlinear process control" (Brief paper), Automatica **31**, 2, pp. 281–286, February, 1995.
Tao G., P. V. Kokotovic, "Discrete-time adaptive control of plants with unknown output dead-zones" (Brief paper), Automatica **31**, 2, pp. 287–291, February, 1995.
Wen C., "An indirect robust continuous-time adaptive controller with minimal modifications" (Brief paper), Automatica **31**, 2, pp. 293–296, February, 1995.
Syrmos V. L., P. Misra, R. Aripirala, "On the discrete generalized Lyapunov equation" (Brief paper), Automatica **31**, 2, pp. 297–301, February, 1995.
Kwan C.-M., "Sliding mode control of linear systems with mismatched uncertainties" (Brief paper), Automatica **31**, 2, pp. 303–307, February, 1995.
Lucibello P., "Output regulation of nonlinear systems evolving in the neighborhood of a periodic orbit" (Brief paper),

Automatica **31**, 2, pp. 309–314, February, 1995.
Middleton R., J. Freudenberg, "Non-pathological sampling for generalized sampled-data hold functions" (Brief paper), Automatica **31**, 2, pp. 315–319, February, 1995.
Johansen T. A., B. A. Foss, "Identification of non-linear system structure and parameters using regime decomposition" (Brief paper), Automatica **31**, 2, pp. 321–326, February, 1995.
Milanese M., "Properties of least squares estimates in set membership identification" (Brief paper), Automatica **31**, 2, pp. 327–332, February, 1995.
Yaniv O., "Robust feedback synthesis for margins at the plant input" (Brief paper), Automatica **31**, 2, pp. 333–336, February, 1995.
Yang G.-H., S.-Y. Zhang, "Stabilizing controllers for uncertain symmetric composite systems" (Brief paper), Automatica **31**, 2, pp. 337–340, February, 1995.
Abdallah C., P. Dorato, F. Pérez, D. Docampo, "Controller synthesis for a class of interval plants" (Technical Communiqué), Automatica **31**, 2, pp. 341–343, February, 1995.
Geerts T., "A note on lattices of Euclidean subspaces" (Technical Communiqué), Automatica **31**, 2, pp. 345–346, February, 1995.
Rachid A., "A remark on the discretization of singular systems" (Technical Communiqué), Automatica **31**, 2, pp. 347–348, February, 1995.
Fortuna L., G. Miscato, G. Nunnari, "On the bilinear transformation of LQG-balanced realizations" (Technical Communiqué), Automatica **31**, 2, pp. 349–351, February, 1995.
Smith M. C., "The general problem of the stability of motion, by A. M. Lyapunov" (Book review), Automatica **31**, 2, pp. 353–354, February, 1995.
Egardt B., B. Lennartson, "Performance modeling of automated manufacturing systems, by N. Viswanadham and Y. Narahari" (Book review), Automatica **31**, 2, pp. 354–356, February, 1995.

## Volume 31, Issue 3 — March, 1995

Kwakernaak H., "Obituary Yoshifumi Sunahara" (Editorial), Automatica **31**, 3, pp. 365–366, March, 1995.
Madievski A. G., B. D. O. Anderson, M. Gevers, "Optimum realizations of sampled-data controllers for FWL sensitivity minimization" (Regular paper), Automatica **31**, 3, pp. 367–379, March, 1995.
Lawrence D. A., W. J. Rugh, "Gain scheduling dynamic linear controllers for a nonlinear plant" (Regular paper), Automatica **31**, 3, pp. 381–390, March, 1995.
Roorda B., "Algorithms for global total least squares modelling of finite multivariable time series" (Regular paper), Automatica **31**, 3, pp. 391–404, March, 1995.
Holloway L. E., "Trajectory encoding for systems with irregular observations" (Regular paper), Automatica **31**, 3, pp. 405–418, March, 1995.
Lin Wei, C. I. Byrnes, "Discrete-time nonlinear $H_\infty$ control with measurement feedback" (Regular paper), Automatica **31**, 3, pp. 419–434, March, 1995.
Guo Lei, "Convergence and logarithm laws of self-tuning regulators" (Regular paper), Automatica **31**, 3, pp. 435–450, March, 1995.
Blanchini F., "Nonquadratic Lyapunov functions for robust control" (Regular paper), Automatica **31**, 3, pp. 451–461, March, 1995.
Kogan J., A. Leizarowitz, "Frequency domain criterion for robust stability of interval time-delay systems" (Brief paper), Automatica **31**, 3, pp. 463–469, March, 1995.
Wong J.-Y., D. P. Looze, "Robust performance for systems with component-bounded signals" (Brief paper), Automatica **31**, 3, pp. 471–475, March, 1995.
Wang Qing-Guo, Tong Heng Lee, Kok Kiong Tan, "Automatic tuning of finite spectrum assignment controllers for delay systems" (Brief paper), Automatica **31**, 3, pp. 477–482, March, 1995.
Su Chun-Yi, Y. Stepanenko, Tin-Pui Leung, "Combined adaptive and variable structure control for constrained robots" (Brief paper), Automatica **31**, 3, pp. 483–488, March, 1995.
Voulgaris P., "On optimal $\ell^\infty$ to $\ell^\infty$ filtering" (Brief paper), Automatica **31**, 3, pp. 489–495, March, 1995.
Ho Weng Khuen, Chang Chieh Hang, L. S. Cao, "Tuning of PID controllers based on gain and phase margin specifications" (Brief paper), Automatica **31**, 3, pp. 497–502, March, 1995.
Dahleh M. A., E. D. Sontag, D. N. C. Tse, J. N. Tsitsiklis, "Worst-case identification of nonlinear fading memory systems" (Brief paper), Automatica **31**, 3, pp. 503–508, March, 1995.
Franklin G. F., "Digital control and implementations: finite wordlength considerations, by D. Williamson" (Book review), Automatica **31**, 3, pp. 509–510, March, 1995.

## Volume 31, Issue 4 — April, 1995

Yuan Jing, "A neural network measuring the intersection of $m$ -dimensional convex polyhedra" (Regular paper), Automatica **31**, 4, pp. 517–529, April, 1995.
Chen Horng-Bin, J. H. Chow, M. A. Kale, K. D. Minto, "Simultaneous stabilization using stable system inversion" (Regular paper), Automatica **31**, 4, pp. 531–542, April, 1995.
Vries D. K. de, P. M. J. van den Hof, "Quantification of uncertainty in transfer function estimation: a mixed probabilistic-worst-case approach" (Regular paper), Automatica **31**, 4, pp. 543–557, April, 1995.
Mušicki D., R. Evans, "Integrated probabilistic data association-finite resolution" (Regular paper), Automatica **31**, 4, pp. 559–570, April, 1995.
Lawrence D. A., "Adaptive system stability robustness via burst recovery" (Regular paper), Automatica **31**, 4, pp. 571–580, April, 1995.
Gu Keqin, "Absolute stability of systems under block diagonal memoryless uncertainties" (Brief paper), Automatica **31**, 4, pp. 581–584, April, 1995.
Spong M. W., "Adaptive control of flexible joint manipulators: comments on two papers" (Brief paper), Automatica **31**, 4, pp. 585–590, April, 1995.
Colaneri P., G. De Nicolao, "Multirate LQG control of continuous-time stochastic systems" (Brief paper), Automatica **31**, 4, pp. 591–596, April, 1995.
Mathelin M. de, M. Bodson, "Multivariable model reference adaptive control without constraints on the high-frequency gain matrix" (Brief paper), Automatica **31**, 4, pp. 597–604, April, 1995.
Kučera V., F. J. Kraus, "FIFO stable control systems" (Brief paper), Automatica **31**, 4, pp. 605–609, April, 1995.
Yedavalli R. K., Yong Liu, "$H_\infty$ control with regional stability constraints" (Brief paper), Automatica **31**, 4, pp. 611–615, April, 1995.
Osburn S. L., D. S. Bernstein, "An exact treatment of the achievable closed-loop $H_2$ performance of sampled-data controllers: from continuous-time to open-loop" (Brief paper), Automatica **31**, 4, pp. 617–620, April, 1995.
Kuijper M., "Why do stabilizing controllers stabilize?" (Brief paper), Automatica **31**, 4, pp. 621–625, April, 1995.
Gertler J. J., R. Monajemy, "Generating directional residuals with dynamic parity relations" (Brief paper), Automatica **31**, 4, pp. 627–635, April, 1995.

Frater M. R., R. R. Bitmead, C. R. Johnson, Jr., "Local minima escape transients by stochastic gradient descent algorithms in blind adaptive equalizers" (Brief paper), Automatica **31**, 4, pp. 637–641, April, 1995.
Chen B. M., Da-Zhong Zheng, "Simultaneous finite- and infinite-zero assignments of linear systems" (Brief paper), Automatica **31**, 4, pp. 643–648, April, 1995.
Friedman J. H., P. T. Kabamba, P. P. Khargonekar, "Worst-case and average $\mathcal{H}_2$ performance analysis against real constant parametric uncertainty" (Brief paper), Automatica **31**, 4, pp. 649–657, April, 1995.
Munro N., "Recent advances in computer-aided control systems engineering, by M. Jamshidi and C. J. Herget" (Book review), Automatica **31**, 4, pp. 659–661, April, 1995.

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Berg J. M., H. G. Kwatny, "A canonical parameterization of the Kronecker form of a matrix pencil" (Regular paper), Automatica **31**, 5, pp. 669–680, May, 1995.
Banerjee P., S. L. Shah, "The role of signal processing methods in the robust design of predictive control" (Regular paper), Automatica **31**, 5, pp. 681–695, May, 1995.
Doyle, III F. J., B. A. Ogunnaike, R. K. Pearson, "Nonlinear model-based control using second-order Volterra models" (Regular paper), Automatica **31**, 5, pp. 697–714, May, 1995.
Chen Desong, "Adaptive control of hot-dip galvanizing" (Regular paper), Automatica **31**, 5, pp. 715–733, May, 1995.
Tang Yu, E. F. Camacho, J. J. Flores, "Frequency domain adaptive control: band-wise compensation" (Brief paper), Automatica **31**, 5, pp. 735–740, May, 1995.
Chang W. S., I. H. Suh, T. W. Kim, "Analysis and design of two types of digital repetitive control systems" (Brief paper), Automatica **31**, 5, pp. 741–746, May, 1995.
Kościelny J. M., "Fault isolation in industrial processes by the dynamic table of states method" (Brief paper), Automatica **31**, 5, pp. 747–753, May, 1995.
Partington J. R., P. M. Mäkilä, "Analysis of linear methods for robust identification in $\ell_1$" (Brief paper), Automatica **31**, 5, pp. 755–758, May, 1995.
Tempo R., "Worst-case optimality of smoothing algorithms for parametric system identification" (), Automatica **31**, 5, pp. 759–763, May, 1995.
Abou-Kandil H., G. Freiling, G. Jank, "On the solution of discrete-time Markovian jump linear quadratic control problems" (Brief paper), Automatica **31**, 5, pp. 765–768, May, 1995.
Bartolini G., A. Ferrara, V. I. Utkin, "Adaptive sliding mode control in discrete-time systems" (Brief paper), Automatica **31**, 5, pp. 769–773, May, 1995.
Colaneri P., S. Longhi, "The realization problem for linear periodic systems" (Brief paper), Automatica **31**, 5, pp. 775–779, May, 1995.
Chan J.-T. H., "Multivariable controller for redundantly actuated systems: a numerical design approach for open-loop data" (Brief paper), Automatica **31**, 5, pp. 781–786, May, 1995.
Xiong Kaiqi, "Necessary and sufficient conditions for the existence of a G-type Lyapunov function" (Technical Communiqué), Automatica **31**, 5, pp. 787–791, May, 1995.
Lee E. B., "Time-delay systems: stability and performance criteria with applications, by J. E. Marshall, H. Górecki, K. Walton and A. Korytowski" (Book review), Automatica **31**, 5, pp. 793–795, May, 1995.
Karcanias N., "Analysis and design of discrete linear control systems, by V. Kučera" (Book review), Automatica **31**, 5, pp. 795–797, May, 1995.

**Volume 31, Issue 6 — June, 1995**

El-Khazali R., R. DeCarlo, "Output feedback variable structure control design" (Regular paper), Automatica **31**, 6, pp. 805–816, June, 1995.
Bošković J. D., K. S. Narendra, "Comparison of linear, nonlinear and neural-network-based adaptive controllers for a class of fed-batch fermentation processes" (Regular paper), Automatica **31**, 6, pp. 817–840, June, 1995.
Wei Qifeng, W. P. Dayawansa, W. S. Levine, "Nonlinear controller for an inverted pendulum having restricted travel" (Regular paper), Automatica **31**, 6, pp. 841–850, June, 1995.
Chung C. C., J. Hauser, "Nonlinear control of a swinging pendulum" (Regular paper), Automatica **31**, 6, pp. 851–862, June, 1995.
Rossiter J. A., B. Kouvaritakis, J. R. Gossner, "Feasibility and stability results for constrained stable generalized predictive control" (Regular paper), Automatica **31**, 6, pp. 863–877, June, 1995.
Qiu Li, B. Bernhardsson, A. Rantzer, E. J. Davison, P. M. Young' J. C. Doyle, "A formula for computation of the real stability radius" (Regular paper), Automatica **31**, 6, pp. 879–890, June, 1995.
Chen Chih-Yuan, Ming-Hwei Perng, "Quantitative robust performance design with minimal cost of feedback" (Brief paper), Automatica **31**, 6, pp. 891–896, June, 1995.
Bonilla M. E., M. Malabre, "Geometric minimization under external equivalence for implicit descriptions" (Brief paper), Automatica **31**, 6, pp. 897–901, June, 1995.
Cho Y. M., T. Kailath, "Fast subspace-based system identification: an instrumental variable approach" (Brief paper), Automatica **31**, 6, pp. 903–905, June, 1995.
Misra P., P. Van Dooren, V. Syrmos, "Pole-zero representation of descriptor systems" (Brief paper), Automatica **31**, 6, pp. 907–912, June, 1995.
Rezayat F., "On the use of an SPSA-based model-free controller in quality improvement" (Technical Communiqué), Automatica **31**, 6, pp. 913–915, June, 1995.
Choi Han Ho, Myung Jin Chung, "Memoryless $H_\infty$ controller design for linear systems with delayed state and control" (Technical Communiqué), Automatica **31**, 6, pp. 917–919, June, 1995.
Mori T., H. Kokame, "Comments on 'On the stability of discrete-time linear interval systems"' (Technical Communiqué), Automatica **31**, 6, pp. 921–922, June, 1995.
Fidler J., "Computational optimal control, by R. Bulirsch and D. Kraft" (Book review), Automatica **31**, 6, p. 923, June, 1995.
Nedoma P., "Solving control engineering problems with MATLAB, by K. Ogata" (Book review), Automatica **31**, 6, p. 924, June, 1995.

**Volume 31, Issue 7 — July, 1995**

Toker O., H. Özbay, "Gap metric problem for MIMO delay systems: parametrization of all suboptimal controllers" (Regular paper), Automatica **31**, 7, pp. 931–940, July, 1995.
Brogliato B., R. Ortega, R. Lozano, "Global tracking controllers for flexible-joint manipulators: a comparative study" (Regular paper), Automatica **31**, 7, pp. 941–956, July, 1995.
Hakvoort R. G., P. M. J. van den Hof, "Consistent parameter bounding identification for linearly parametrized model sets" (Regular paper), Automatica **31**, 7, pp. 957–969, July, 1995.
Viel F., E. Busvelle, J. P. Gauthier, "Stability of polymerization reactors using I/O linearization and a high-gain observer" (Regular paper), Automatica **31**, 7, pp. 971–984, July, 1995.
Borno I., Z. Gajic, "Parallel algorithms for optimal control of weakly coupled and singularly perturbed jump linear systems" (Brief paper), Automatica **31**, 7, pp. 985–988, July,

1995.
Hu J., D. M. Dawson, Y. Qian, "Position tracking control of an induction motor via partial state feedback" (Brief paper), Automatica **31**, 7, pp. 989–1000, July, 1995.
Palmor Z. J., Y. Halevi, N. Krasney, "Automatic tuning of decentralized PID controllers for TITO processes" (Brief paper), Automatica **31**, 7, pp. 1001–1010, July, 1995.
Yang Guang-Hong, Si-Ying Zhang, "Structural properties of large-scale systems possessing similar structures" (Brief paper), Automatica **31**, 7, pp. 1011–1017, July, 1995.
Zheng Wei Xing, Chun-Bo Feng, "A bias-correction method for indirect identification of closed-loop systems" (Brief paper), Automatica **31**, 7, pp. 1019–1024, July, 1995.
Carvalho J. R. H., P. A. V. Ferreira, "Multiple-criterion control: a convex programming approach" (Brief paper), Automatica **31**, 7, pp. 1025–1029, July, 1995.
Zheng F., M. Cheng, Wei-Bing Gao, "Variable structure control of time-delay systems with a simulation study on stabilizing combustion in liquid propellant rocket motors" (Brief paper), Automatica **31**, 7, pp. 1031–1037, July, 1995.
Medvedev A., "Fault detection and isolation by a continuous parity space method" (Brief paper), Automatica **31**, 7, pp. 1039–1044, July, 1995.
Turan L., D. L. Mingori, "A unified loop transfer recovery approach to robust control using $\mathcal{H}_\infty$ optimization methods" (Brief paper), Automatica **31**, 7, pp. 1045–1052, July, 1995.
Seron M. M., D. J. Hill, A. L. Fradkov, "Nonlinear adaptive control of feedback passive systems" (Brief paper), Automatica **31**, 7, pp. 1053–1060, July, 1995.
Bernstein D. S., W. M. Haddad, A. G. Sparks, "A Popov criterion for uncertain linear multivariable systems" (Technical Communiqué), Automatica **31**, 7, pp. 1061–1064, July, 1995.
Böhm J., "Digital simulation of dynamic systems: a control theory approach, by T. T. Hartely, G. O. Beale and S. P. Chicatelli" (Book review), Automatica **31**, 7, pp. 1065–1066, July, 1995.
Chappell M., "Optimal control of drug administration in cancer chemotherapy, by R. Martin and K. L. Teo" (Book review), Automatica **31**, 7, pp. 1066–1067, July, 1995.

## Volume 31, Issue 8 — August, 1995

James M. R., S. Yuliar, "Numerical approximation of the $H_\infty$ norm for nonlinear systems" (Regular paper), Automatica **31**, 8, pp. 1075–1086, August, 1995.
Zhou K., "Relative/multiplicative model reduction for unstable and non-minimum-phase systems" (Regular paper), Automatica **31**, 8, pp. 1087–1098, August, 1995.
Tsiotras P., M. Corless, J. M. Longuski, "A novel approach to the attitude control of axisymmetric spacecraft" (Regular paper), Automatica **31**, 8, pp. 1099–1112, August, 1995.
Chen Jie, C. N. Nett, "Sensitivity integrals for multivariable discrete-time systems" (Regular paper), Automatica **31**, 8, pp. 1113–1124, August, 1995.
Kadlec J., F. M. F. Gaston, G. W. Irwin, "The block regularised parameter estimator and its parallelisation" (Regular paper), Automatica **31**, 8, pp. 1125–1136, August, 1995.
Moons C., B. De Moor, "Parameter identification of induction motor drives" (Regular paper), Automatica **31**, 8, pp. 1137–1147, August, 1995.
Barton S.A., "Two-dimensional movement controlled by a chaotic neural network" (Regular paper), Automatica **31**, 8, pp. 1149–1155, August, 1995.
Chiacchiarini H. G., A. C. Desages, J. A. Romagnoli, A. Palazoğlu, "Variable structure control with a second-order sliding condition: application to a steam generator" (Regular paper), Automatica **31**, 8, pp. 1157–1168, August, 1995.
Allison B. J., J. E. Ciarniello, P. J.-C. Tessier, G. A. Dumont, "Dual adaptive control of chip refiner motor load" (Regular paper), Automatica **31**, 8, pp. 1169–1184, August, 1995.
Kaminer I., A. M. Pascoal, P. P. Khargonekar, E. E. Coleman, "A velocity algorithm for the implementation of gain-scheduled controllers" (Brief paper), Automatica **31**, 8, pp. 1185–1191, August, 1995.
Moheimani S. O. R., A. V. Savkin, I. R. Petersen, "A connection between $\mathcal{H}_\infty$ control and the absolute stabilizability of discrete-time uncertain linear systems" (Technical Communiqué), Automatica **31**, 8, pp. 1193–1195, August, 1995.
Blondel V., C. Lundvall, "A rational test for strong stabilization" (Technical Communiqué), Automatica **31**, 8, pp. 1197–1198, August, 1995.
Tits A. L., M. K. H. Fan, "On the small-/*mu* theorem" (Technical Communiqué), Automatica **31**, 8, pp. 1199–1201, August, 1995.

## Volume 31, Issue 9 — September, 1995

Axelby G. S., "Obituary Patrick C. Parks" (Editorial), Automatica **31**, 9, pp. 1209–1211, September, 1995.
Wang H. O., E. H. Abed, "Bifurcation control of a chaotic system" (Regular paper), Automatica **31**, 9, pp. 1213–1226, September, 1995.
Didinsky G., Zigang Pan, T. Başar, "Parameter identification for uncertain plants using $H^\infty$ methods" (Regular paper), Automatica **31**, 9, pp. 1227–1250, September, 1995.
Apkarian P., P. Gahinet, G. Becker, "Self-scheduled $\mathcal{H}_\infty$ control of linear parameter-varying systems: a design example" (Regular paper), Automatica **31**, 9, pp. 1251–1261, September, 1995.
Mustafa D., T. N. Davidson, "Block bialternate sum and associated stability formulae" (Regular paper), Automatica **31**, 9, pp. 1263–1274, September, 1995.
Berghuis H., H. Roebbers, H. Nijmeijer, "Experimental comparison of parameter estimation methods in adaptive robot control" (Regular paper), Automatica **31**, 9, pp. 1275–1285, September, 1995.
Gusev S. V., "Minimax control under a bound on the partial covariance sequence of the disturbance" (Regular paper), Automatica **31**, 9, pp. 1287–1301, September, 1995.
Leventides J., N. Karcanias, "Global asymptotic linearisation of the pole placement map: a closed-form solution for the constant output feedback problem" (Brief paper), Automatica **31**, 9, pp. 1303–1309, September, 1995.
Yun Zou, Yang Chengwu, "Algorithms for the computation of the transfer function matrix for two-dimensional regular and singular state-space models" (Brief paper), Automatica **31**, 9, pp. 1311–1315, September, 1995.
Furuta K., M. Wongsaisuwan, "Discrete-time LQG dynamic controller design using plant Markov parameters" (Brief paper), Automatica **31**, 9, pp. 1317–1324, September, 1995.
Presman E., S. Sethi, Qing Zhang, "Optimal feedback production planning in a stochastic $N$-machine flowshop" (Brief paper), Automatica **31**, 9, pp. 1325–1332, September, 1995.
Palmor Z. J., Y. Halevi, T. Efrati, "A general and exact method for determining limit cycles in decentralized relay systems" (Brief paper), Automatica **31**, 9, pp. 1333–1339, September, 1995.
Wang Danwei, "A simple iterative learning controller for manipulators with flexible joints" (Brief paper), Automatica **31**, 9, pp. 1341–1344, September, 1995.
Borno I., "Parallel computation of the solutions of coupled algebraic Lyapunov equations" (Technical Communiqué), Automatica **31**, 9, pp. 1345–1347, September, 1995.

Choi Han Ho, Myung Jin Chung, "Memoryless stabilization of uncertain dynamic systems with time-varying delayed states and controls" (Technical Communiqué), Automatica **31**, 9, pp. 1349–1351, September, 1995.

Alamir M., G. Bornard, "Stability of a truncated infinite constrained receding horizon scheme: the general discrete nonlinear case" (Technical Communiqué), Automatica **31**, 9, pp. 1353–1356, September, 1995.

Kučera V., C. E. De Souza, "A necessary and sufficient condition for output feedback stabilizability" (Technical Communiqué), Automatica **31**, 9, pp. 1357–1359, September, 1995.

## Volume 31, Issue 10 — October, 1995

Goodwin G. C., D. Q. Mayne, J. Shim, "Trade-offs in linear filter design" (Regular paper), Automatica **31**, 10, pp. 1367–1376, October, 1995.

Gustafsson F., H. Hjalmarsson, "Twenty-one ML estimators for model selection" (Regular paper), Automatica **31**, 10, pp. 1377–1392, October, 1995.

Cevik M. K. K., J. M. Schumacher, "The regulator problem with robust stability" (Regular paper), Automatica **31**, 10, pp. 1393–1406, October, 1995.

Liu Danyang, Xuanhuang Liu, "Optimal and minimum-energy optimal tracking of discrete linear time-varying systems" (Regular paper), Automatica **31**, 10, pp. 1407–1419, October, 1995.

Annaswamy A. M., S. P. Kárason, "Discrete-time adaptive control in the presence of input constraints" (Regular paper), Automatica **31**, 10, pp. 1421–1431, October, 1995.

Holmberg U., P. Myszkorowski, Y. Piguet, R. Longchamp, "On compensation of nonminimum-phase zeros" (Brief paper), Automatica **31**, 10, pp. 1433–1441, October, 1995.

Parisini T., R. Zoppoli, "A receding-horizon regulator for nonlinear systems and a neural approximation" (Brief paper), Automatica **31**, 10, pp. 1443–1451, October, 1995.

Brusin V. A., V. A. Ugrinovskii, "Absolute stability approach to stochastic stability of infinite-dimensional nonlinear systems" (Brief paper), Automatica **31**, 10, pp. 1453–1458, October, 1995.

Krishnamurthy V., "Estimation of quantized linear errors-in-variables models" (Brief paper), Automatica **31**, 10, pp. 1459–1464, October, 1995.

Nicosia S., P. Tomei, "A global output feedback controller for flexible joint robots" (Brief paper), Automatica **31**, 10, pp. 1465–1469, October, 1995.

Coulibaly E., S. Maiti, C. Brosilow, "Internal model predictive control (IMPC)" (Brief paper), Automatica **31**, 10, pp. 1471–1482, October, 1995.

Bone G. M., "A novel iterative learning control formulation of generalized predictive control" (Brief paper), Automatica **31**, 10, pp. 1483–1487, October, 1995.

Milani B. E. A., A. N. Carvalho, "Robust linear regulator design for discrete-time systems under polyhedral constraints" (Brief paper), Automatica **31**, 10, pp. 1489–1493, October, 1995.

Karakaşoğlu A., M. K. Sundareshan, "A recurrent neural network-based adaptive variable structure model-following control of robotic manipulators" (Brief paper), Automatica **31**, 10, pp. 1495–1507, October, 1995.

Chan C. Y., "Robust discrete quasi-sliding mode tracking controller" (Technical Communiqué), Automatica **31**, 10, pp. 1509–1511, October, 1995.

Spall J. C., "The Kantorovich inequality for error analysis of the Kalman filter with unknown noise distributions" (Technical Communiqué), Automatica **31**, 10, pp. 1513–1517, October, 1995.

Kadlec J., "Adaptive system identification and signal processing algorithms, N. Kalouptsidis and S. Theodoridis (editors)" (Book review), Automatica **31**, 10, pp. 1519–1521, October, 1995.

Carabelli S., "Designing linear control systems with MATLAB, by K. Ogata" (Book review), Automatica **31**, 10, p. 1521, October, 1995.

Zagalak P., "Linear multichannel control: a system matrix approach, by A. B. Özgüler" (Book review), Automatica **31**, 10, pp. 1522–1523, October, 1995.

## Volume 31, Issue 11 — November, 1995

Kwakernaak H., "Some statistics about Automatica authors" (Editorial), Automatica **31**, 11, p. 1531, November, 1995.

Rebarber R., S. Townley, "Robustness and continuity of the spectrum for uncertain distributed parameter systems" (Regular paper), Automatica **31**, 11, pp. 1533–1546, November, 1995.

Partanen A. G., R. R. Bitmead, "The application of an iterative identification and controller design to a sugar cane crushing mill" (Regular paper), Automatica **31**, 11, pp. 1547–1563, November, 1995.

Nahapetian G., Wei Ren, "Uncertainty structures in adaptive and robust stabilization" (Regular paper), Automatica **31**, 11, pp. 1565–1575, November, 1995.

Zang Zhuquan, R. R. Bitmead, M. Gevers, "Iterative weighted least-squares identification and weighted LQG control design" (Regular paper), Automatica **31**, 11, pp. 1577–1594, November, 1995.

Marino R., S. Peresada, P. Tomei, "Nonlinear adaptive control of permanent magnet step motors" (Regular paper), Automatica **31**, 11, pp. 1595–1604, November, 1995.

Valášek M., N. Olgac, "Efficient eigenvalue assignments for general linear MIMO systems" (Regular paper), Automatica **31**, 11, pp. 1605–1617, November, 1995.

Lee W. S., B. D. O. Anderson, I. M. Y. Mareels, R. L. Kosut, "On some key issues in the windsurfer approach to adaptive robust control" (Regular paper), Automatica **31**, 11, pp. 1619–1636, November, 1995.

Smith R. S., "Model validation for robust control: an experimental process control application" (Regular paper), Automatica **31**, 11, pp. 1637–1647, November, 1995.

Savkin A. V., I. R. Petersen, "An uncertainty averaging approach to optimal guaranteed cost control of uncertain systems with structured uncertainty" (Brief paper), Automatica **31**, 11, pp. 1649–1653, November, 1995.

Meinsma G., "Unstable and nonproper weights in $\mathcal{H}_\infty$ control" (Brief paper), Automatica **31**, 11, pp. 1655–1658, November, 1995.

Yeşildirek A., F. L. Lewis, "Feedback linearization using neural networks" (Brief paper), Automatica **31**, 11, pp. 1659–1664, November, 1995.

Lucibello P., "Output zeroing with internal stability by learning" (Brief paper), Automatica **31**, 11, pp. 1665–1672, November, 1995.

Corradini M. L., G. Orlando, "A MIMO variable structure model of the controller of voluntary arm movements: an identification study" (Brief paper), Automatica **31**, 11, pp. 1673–1679, November, 1995.

Willems J. C., "Linear robust control, by M. Green and D. J. N. Limebeer" (Book review), Automatica **31**, 11, p. 1681, November, 1995.

## Volume 31, Issue 12 — December, 1995

Söderström T., K. J. Åström, "Special issue on trends in system identification" (Editorial), Automatica **31**, 12, pp. 1689–1690, December, 1995.

Sjöberg J., Qinghua Zhang, L. Ljung, A. Benveniste, B. Delyon' Et Al., "Nonlinear black-box modeling in system

identification: a unified overview" (Regular paper), Automatica **31**, 12, pp. 1691–1724, December, 1995.

Juditsky A., H. Hjalmarsson, A. Benveniste, B. Delyon, L. Ljung' Et Al., "Nonlinear black-box models in system identification: mathematical foundations" (Regular paper), Automatica **31**, 12, pp. 1725–1750, December, 1995.

Hof P. M. J. van den, R. J. P. Schrama, "Identification and control — closed-loop issues" (Regular paper), Automatica **31**, 12, pp. 1751–1770, December, 1995.

Ninness B., G. C. Goodwin, "Estimation of model quality" (Regular paper), Automatica **31**, 12, pp. 1771–1797, December, 1995.

Mäkilä P. M., J. R. Partington, T. K. Gustafsson, "Worst-case control-relevant identification" (Regular paper), Automatica **31**, 12, pp. 1799–1819, December, 1995.

Hof P. M. J. van den, P. S. C. Heuberger, J. Bokor, "System identification with generalized orthonormal basis functions" (Regular paper), Automatica **31**, 12, pp. 1821–1834, December, 1995.

Viberg M., "Subspace-based methods for the identification of linear time-invariant systems" (Regular paper), Automatica **31**, 12, pp. 1835–1851, December, 1995.

Van Overschee P., B. De Moor, "A unifying theorem for three subspace system identification algorithms" (Regular paper), Automatica **31**, 12, pp. 1853–1864, December, 1995.

Deistler M., K. Peternell, W. Scherrer, "Consistency and relative efficiency of subspace methods" (Regular paper), Automatica **31**, 12, pp. 1865–1875, December, 1995.

Van Overschee P., B. De Moor, "Choice of state-space basis in combined deterministic-stochastic subspace identification" (Regular paper), Automatica **31**, 12, pp. 1877–1883, December, 1995.

Fitzsimons Ph. M., "Reducing the computation required to solve a standard minimax problem" (Technical Communiqué), Automatica **31**, 12, pp. 1885–1887, December, 1995.

Maryak J. L., J. C. Spall, G. L. Silberman, "Uncertainties for recursive estimators in nonlinear state-space models, with applications to epidemiology" (Technical Communiqué), Automatica **31**, 12, pp. 1889–1892, December, 1995.

Bartoszewicz A., "A comment on 'A time-varying sliding surface for fast and robust tracking control of second-order uncertain systems'" (Technical Communiqué), Automatica **31**, 12, pp. 1893–1895, December, 1995.

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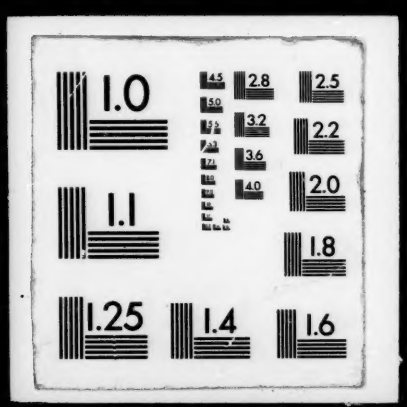
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